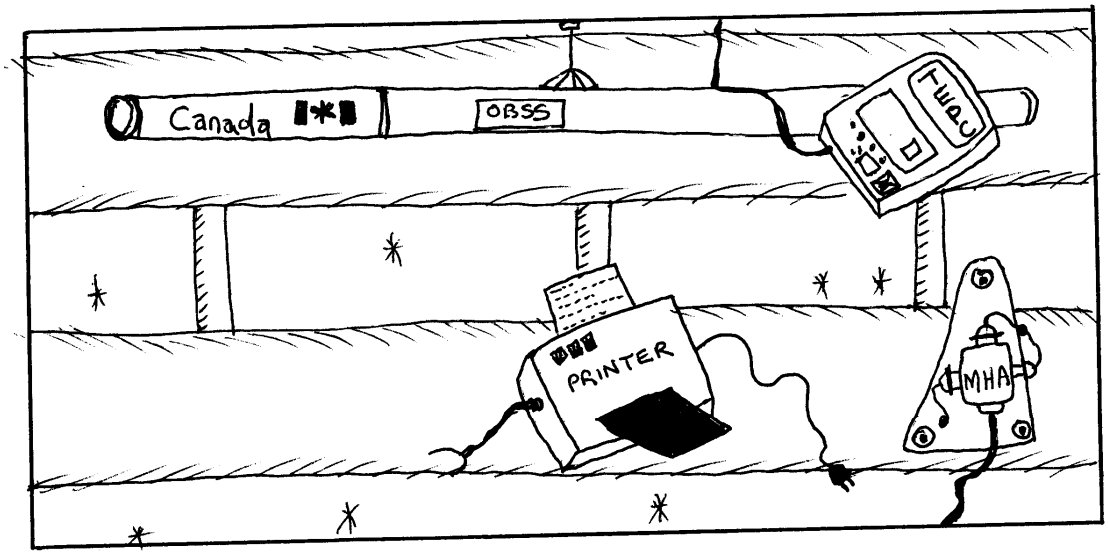
STS-134 / ULF6

FD 14 Execute Package

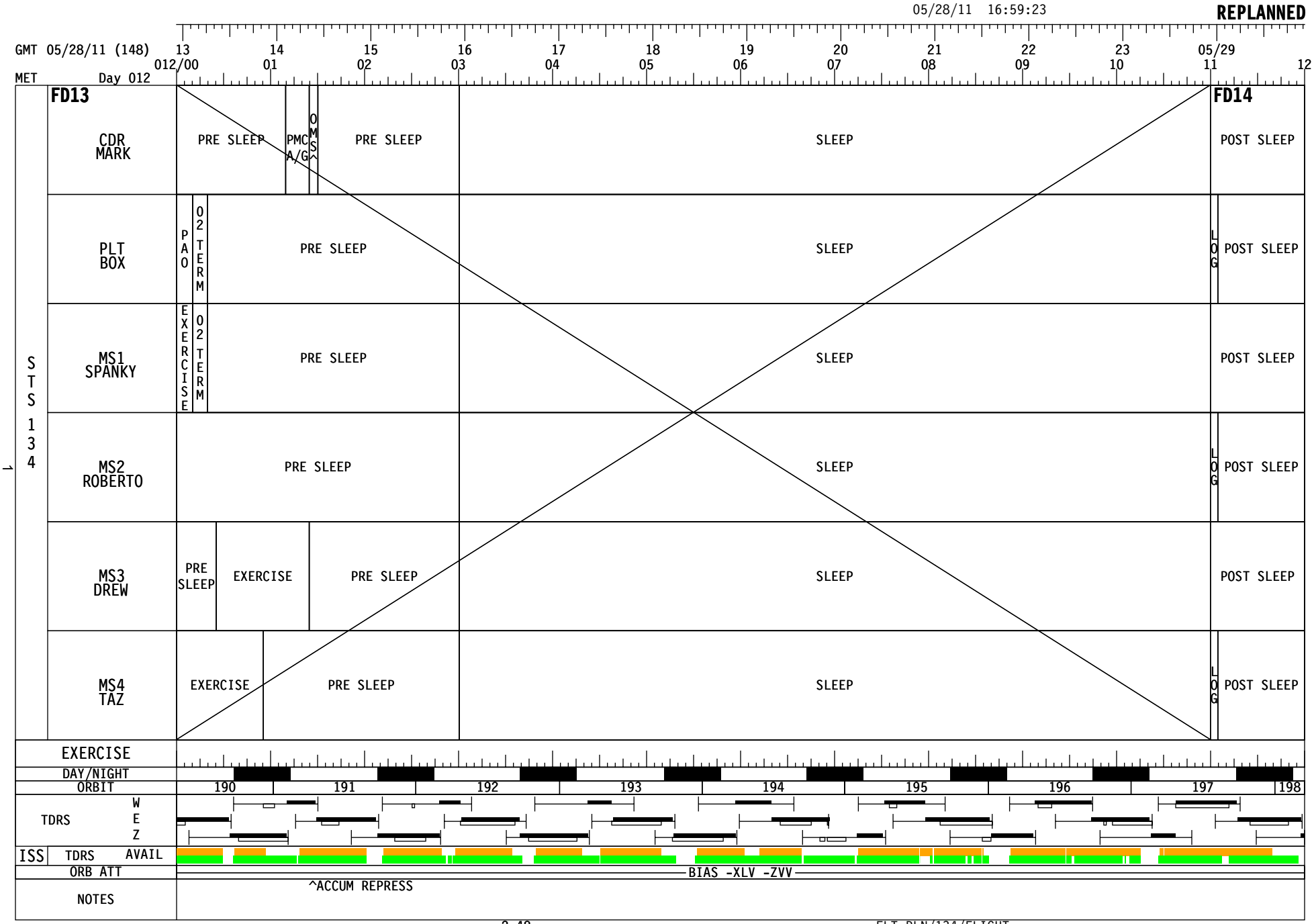
MSG	Page(s)	Title
-	1 - 33	FD14 Summary Timeline (Not Uplinked)
151B	4 - 16	FD14 Flight Plan Revision
152	17 - 18	FD14 Mission Summary
153	19	AUTO REBOOST - VRCS, CONFIG 3
154	20 - 21	FD14 Transfer Message (Change pages Not Distributed)
155	---	FD14 PAO Event (Michigan and Ohio TV Stations) (Not Distributed)
156	22	FD14 Crew Choice Downlink Opportunities
157	23 - 31	ULF6 Stowage Overview for FD14
158	32 - 39	STS-134/ULF6 FD14 EVA TOOL STOW
159	40	Post EVA Transfer to Shuttle
160	41 - 42	ATV Imagery Procedure
161	43 - 50	2.022 ULF-6 Double Coldbag Pack
162A	51	Double Coldbag Packing Overview
163	52 - 58	ULF6 FD14 Stowage Notes
164	59 - 62	CDRA Connector Verification

Items left on ISS Post STS-134



Approved by FAO:
M. Scheib
Approved by OpsPlan:
K. Howell
Last Updated: May 26 2011 11:13 PM GMT
JEDI *(**J**oint **E**xecute package **D**evelopment and **I**ntegration), v3.0*

Michael Scheib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STS 134
FD13
FD14
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PRE SLEEP
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POST SLEEP
PLT BOX
PAO
O2 TERM
PRE SLEEP
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LOG
POST SLEEP
MS1 SPANKY
EXERCISE
O2 TERM
PRE SLEEP
SLEEP
POST SLEEP
MS2 ROBERTO
PRE SLEEP
SLEEP
LOG
POST SLEEP
MS3 DREW
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SLEEP
POST SLEEP
MS4 TAZ
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NOTES
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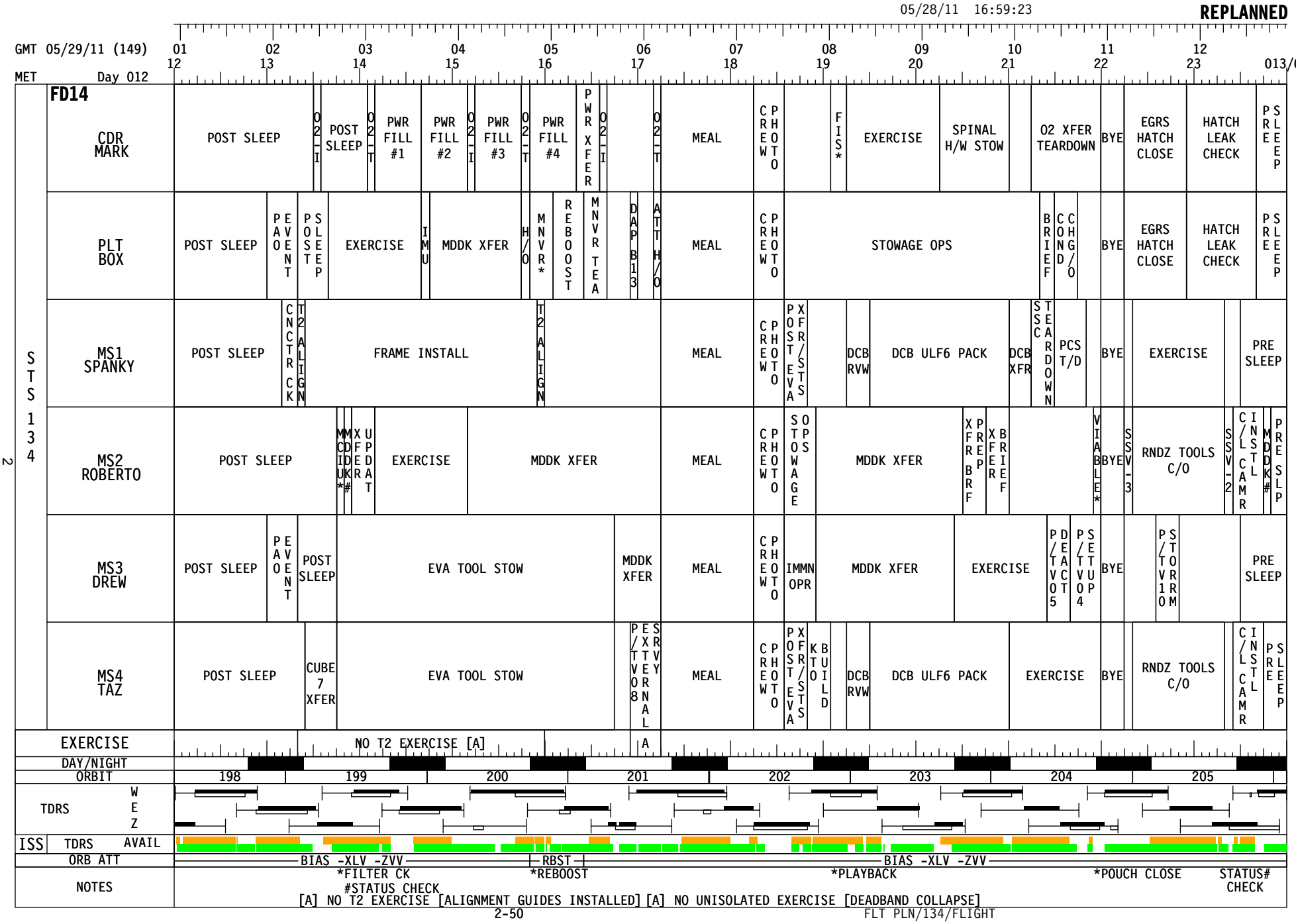
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STS 134
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POST SLEEP
O2-I
POST SLEEP
O2-T
PWR FILL #1
PWR FILL #2
O2-I
PWR FILL #3
O2-T
PWR FILL #4
PWR XFER
O2-I
O2-T
MEAL
CREW PHOTO
FIS*
EXERCISE
SPINAL H/W STOW
O2 XFER TEARDOWN
BYE
EGRS HATCH CLOSE
HATCH LEAK CHECK
PRE SLEEP
PLT BOX
POST SLEEP
PAO EVENT
POST SLEEP
EXERCISE
IMU
MDDK XFER
H/O
MNVR*
REBOOST
MNVR TEA
DAP B13
ATT H/O
MEAL
CREW PHOTO
STOWAGE OPS
BRIEF
COND
CHG/O
BYE
EGRS HATCH CLOSE
HATCH LEAK CHECK
PRE SLEEP
MS1 SPANKY
POST SLEEP
CNCTR CK
T2 ALIGN
FRAME INSTALL
T2 ALIGN
MEAL
CREW PHOTO
POST EVA
XFR/STS
DCB RVW
DCB ULF6 PACK
DCB XFR
SSC TEARDOWN
PCS T/D
BYE
EXERCISE
PRE SLEEP
MS2 ROBERTO
POST SLEEP
MM CDIDUK*#
XFER
UPDAT
EXERCISE
MDDK XFER
MEAL
CREW PHOTO
STOWAGE
OPS
MDDK XFER
XFR BRF
PREP
XFER
BRIEF
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SSV-3
RNDZ TOOLS C/O
SSV-2
C/L CAMR
INSTL
MDDK#
PRESLP
MS3 DREW
POST SLEEP
PAO EVENT
POST SLEEP
EVA TOOL STOW
MDDK XFER
MEAL
CREW PHOTO
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MDDK XFER
EXERCISE
P/TVO5
DEACT
P/TVO4
SETUP
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P/TV10M
STORR
PRE SLEEP
MS4 TAZ
POST SLEEP
CUBE 7 XFER
EVA TOOL STOW
P/TVO8
EXTERNAL
SRVY
MEAL
CREW PHOTO
POST EVA
XFR/STS
KTO
BUILD
DCB RVW
DCB ULF6 PACK
EXERCISE
BYE
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C/L CAMR
INSTL
PRE SLEEP
EXERCISE
NO T2 EXERCISE [A]
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198 199 200 201 202 203 204 205
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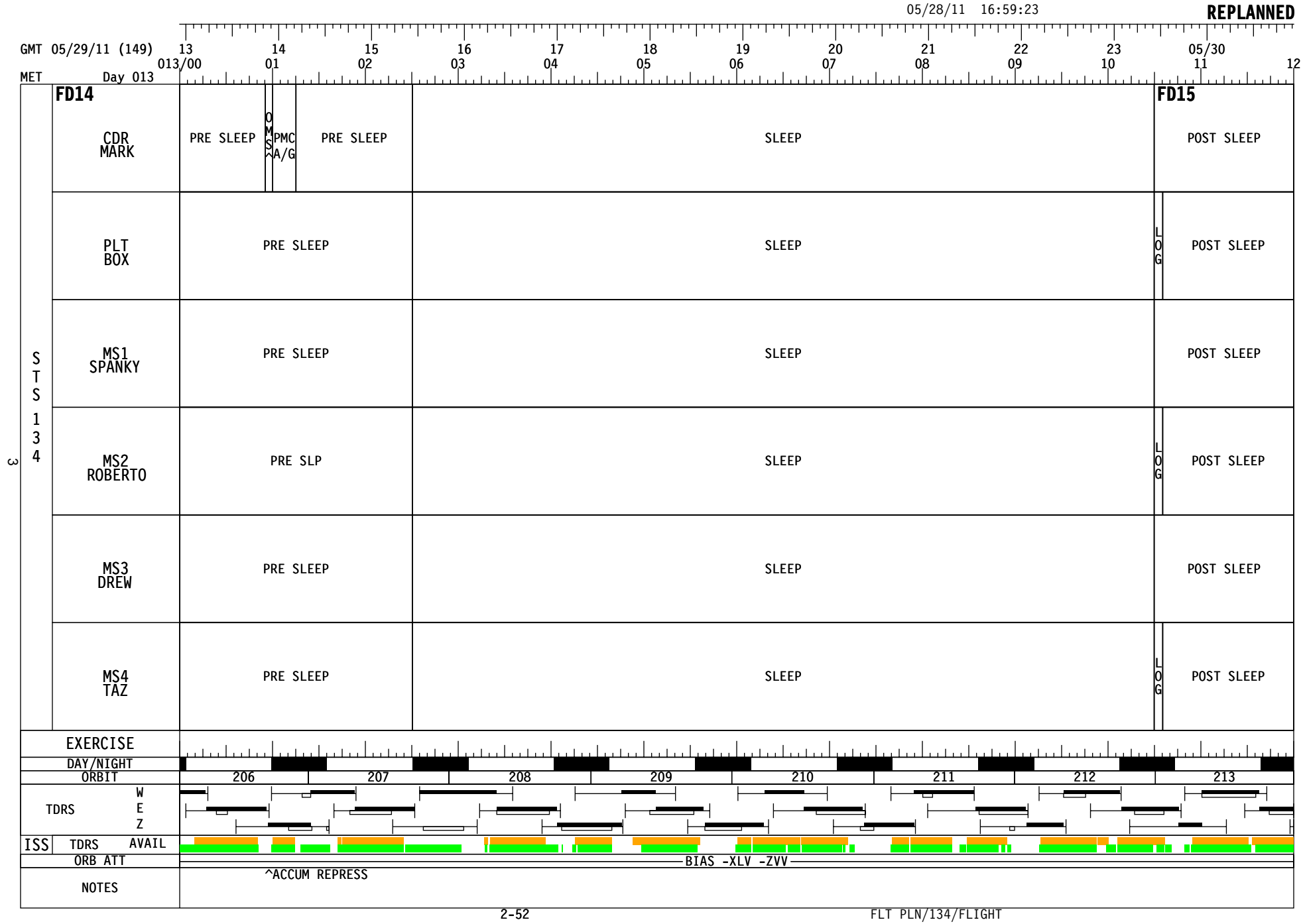
ISS TDRS AVAIL
ORB ATT
BIAS -XLV -ZVV
RBST
BIAS -XLV -ZVV
NOTES
*FILTER CK
#STATUS CHECK
*REBOOST
*PLAYBACK
*POUCH CLOSE
STATUS# CHECK
[A] NO T2 EXERCISE [ALIGNMENT GUIDES INSTALLED] [A] NO UNISOLATED EXERCISE [DEADBAND COLLAPSE]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PRE SLEEP
SLEEP
LOG
POST SLEEP
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PRE SLEEP
SLEEP
POST SLEEP
MS2 ROBERTO
PRE SLP
SLEEP
LOG
POST SLEEP
MS3 DREW
PRE SLEEP
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MS4 TAZ
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EXERCISE
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212
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TDRS
W
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Z
ISS
TDRS AVAIL
ORB ATT
BIAS -XLV -ZVV
NOTES
^ACCUM REPRESS

MSG INDEX

1. Post-Sleep Cryo Config

   For today's post-sleep cryo config, O2 tanks 1, 3, & 4, and H2 tanks 1 & 4 will be active.

   R1 O2,H2 MANF VLV TK1 (two) - OP (tb-OP)
   O2 TK3 HTR A - AUTO

   A11 CRYO TK4 HTR O2 A - AUTO

   A15 CRYO TK5 HTR O2 A - OFF

2. Pre-Sleep Cryo Config
   √MCC for deltas prior to configuring for pre-sleep.

   For tonight's pre-sleep cryo config, manifold 2 will be closed with O2 tanks 2, 3, & 4 active and H2 tanks 2 & 4 active.

   R1 O2,H2 TK1 HTRS A,B (four) - OFF
   TK2 HTRS A,B (four) - AUTO
   O2,H2 MANF VLV TK2 (two) - CL (tb-CL)

3. Viable Operations
   Roberto - Prior to closing the Viable bags today, please remove and trash the University sign.

4. Cube Lab 7 install
   Taz - we have rescheduled the Cube Lab 7 install activity for today. At the JPM1F5_G1 location there should only be the Cube Lab locker (not CTBs). The procedure to install the module into Cube Lab is located in the ASSY Ops Book: 2.110 Cube Lab Module-7 Transfer to ISS (ASSY OPS, Transfer).

5. CDRA Connector Verification
   Spanky , Thank you for your great work on CDRA yesterday! We reviewed all the photos you took and found 4 potential connections of concern, 2 electrical and 2 hydraflows. It could be that these were corrected during your task, but just to be sure, your first activity will have you inspect these locations.

6. CDRA Operations During Reboost
   Spanky, Your CDRA maintenance today is timelined shortly before the Shuttle Reboost. If all goes well, the Node 3 AR rack will be rotated up before the dynamic activities start, but we like to prepare for everything, so we have a plan if things run long. Unfortunately, there is no loads analysis for a rotated rack. Experience from ULF5 tells us the loads will be very small, but to be cautious, Box will provide calls on the big loop for the beginning of each dynamic event (Maneuver to Reboost, Reboost, Maneuver to TEA). For the attitude maneuvers, we'll need to have someone assigned to hold the rack (~5 minutes). MCC-H will call when the attitude maneuvers are complete. For the reboost start and end calls, we ask that you put a hand on the rack for a minute to prepare for any off nominal loads. During the rest of the 14 minutes of reboost, you will be GO to continue work on the rack.

   Box, If CDRA operations onboard the ISS slip into the reboost timeframe, the CDRA rack will need to be restrained for dynamic operations due to loads concerns. Please give the ISS crew a 1 minute out heads-up call prior to the following events to restrain the CDRA rack:

   1. Initiate maneuver to reboost attitude
   2. Initiate reboost
   3. Completion of reboost
   4. Initiate maneuver to TEA

   The ground will inform the ISS crew when the maneuver to reboost attitude and the maneuver to TEA are complete. These are short maneuvers which are best monitored by ground telemetry.

7. Condensate Change Out
   Today you will be changing out ISS CWC S/N 1090 with Orbiter CWC S/N 6006, which was previously processed on ISS and transferred back to the middeck. After changeout is complete, transfer ISS CWC S/N 1090 to NOD2O2 as well as CTB S/N 1016, which is temp stowed on the middeck. Notify MCC when complete.

8. Spinal Photos
   Mark or Box - Could you please let us know which PGSC you put the photos from the Spinal Elongation activity yesterday?

9. Outlook
   To streamline e-mail uplinks following hatch close, please move all messages from your INBOX, SENT ITEMS and UPLINKED BY CAPCOM folders into your personal folders prior to MET 12/22:00.

10. EVA Tool Restow
    Drew and Taz - MSG 28-0083 (134-158) contains the ULF6 Tool Restow matrix for the Tool Restow activity today. Big picture, you will deconfigure all bags from EVA4 (keep 1553 Cable in Node 3 bag) and stow the tools in specified CTBs. This activity also has you retrieve tools in preparation for ULF7 and stow them in a ULF7 Tools mesh bag. As noted in the procedure at the top of the page, items 75-82b, 87, and 116 will be returning on Shuttle and are captured in the Post EVA Transfer to STS procedure as well as the restow matrix. We appreciate that you wanted Ron to help out with this task. Unfortunately, due to timeline constraints, he won't be scheduled for this activity.

11. EVA Transfer to Shuttle
    Spanky and Taz - MSG 28-0084 (134-159) contains a replacement page for the EVA TRANSFER TO SHUTTLE procedure on page FS 2-18. Drew reported yesterday about red showing on Waist Tether s/n 1083. This tether has already been moved to the Tools Transfer mesh bag. We will be swapping it with the Shuttle Waist Tether s/n 1086.

12. O2 Teardown
    Mark, you will be performing O2 Teardown on your own at MET 12/21:15. If you require additional crewmembers, call MCC-H and we will re-organize the plan.

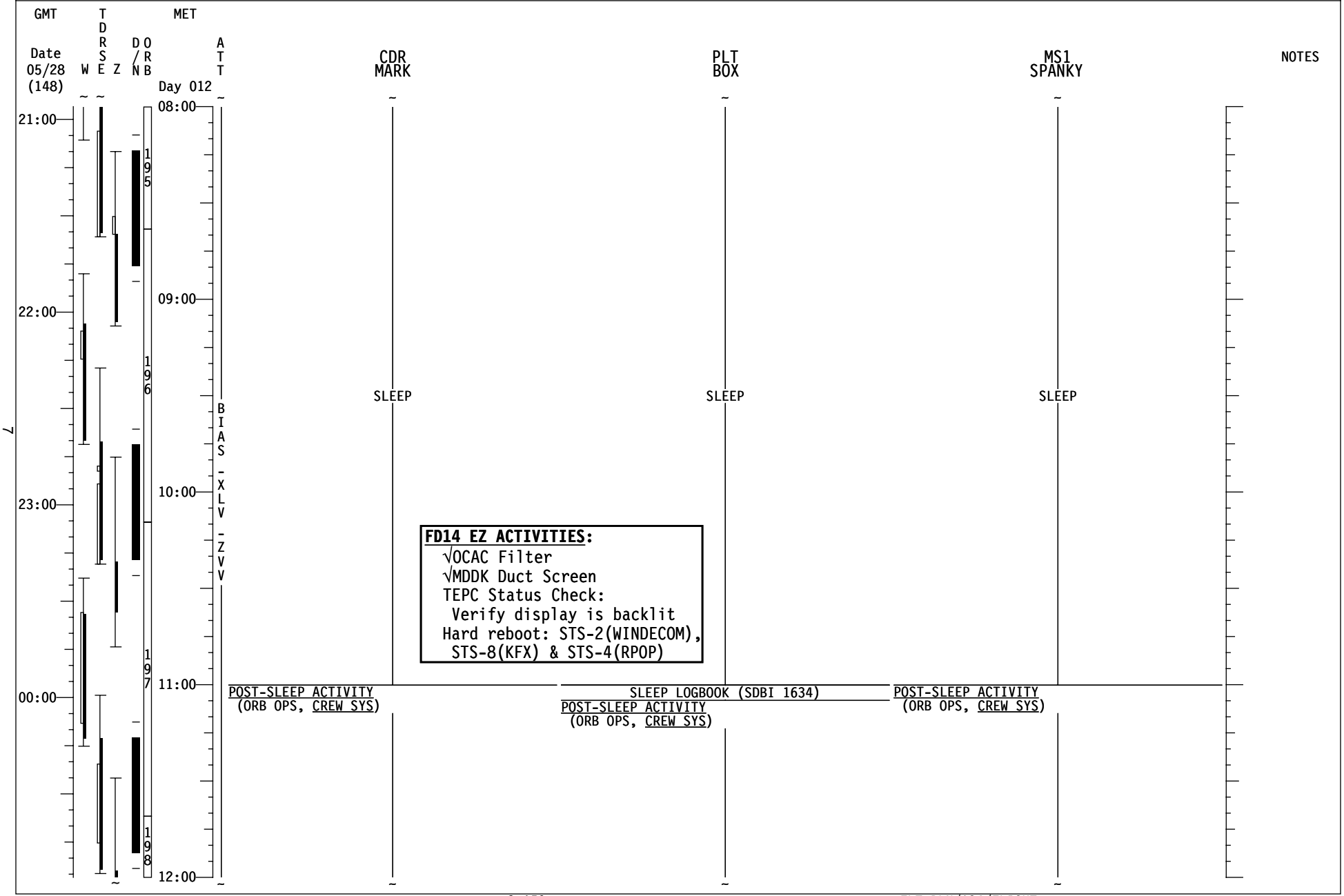
13. Face in Space
    Mark, just a reminder that playback for Face In Space is coming up this afternoon at MET 12/18:55.

14. STORRM
    Drew, Currently we believe DRU3 did not fully initialize, and therefore was unresponsive to commands sent from the STORRM PGSC. All indications are that DRU3 is lost for the remainder of this mission. Due to the unknown cause of this failure, and the fact that DRU1 is identical in design to DRU3, we are removing the STORRM tools checkout on FD14 as a precaution. This will remove a DRU power cycle which is a possible failure cause. All information from the FD13 checkout showed good connectivity to the rest of the system. The ground is currently developing some additional steps for undock/re-rndz/sep phases, which will power off DRU3 and the docking camera, and override the associated alerts for each. The customer still requires the P/TV 10 STORRM photogrammetry to be performed FD 14 with 2 sets of photographs (per procedure). VNS and DRU1 are not affected by the DRU3 failure.

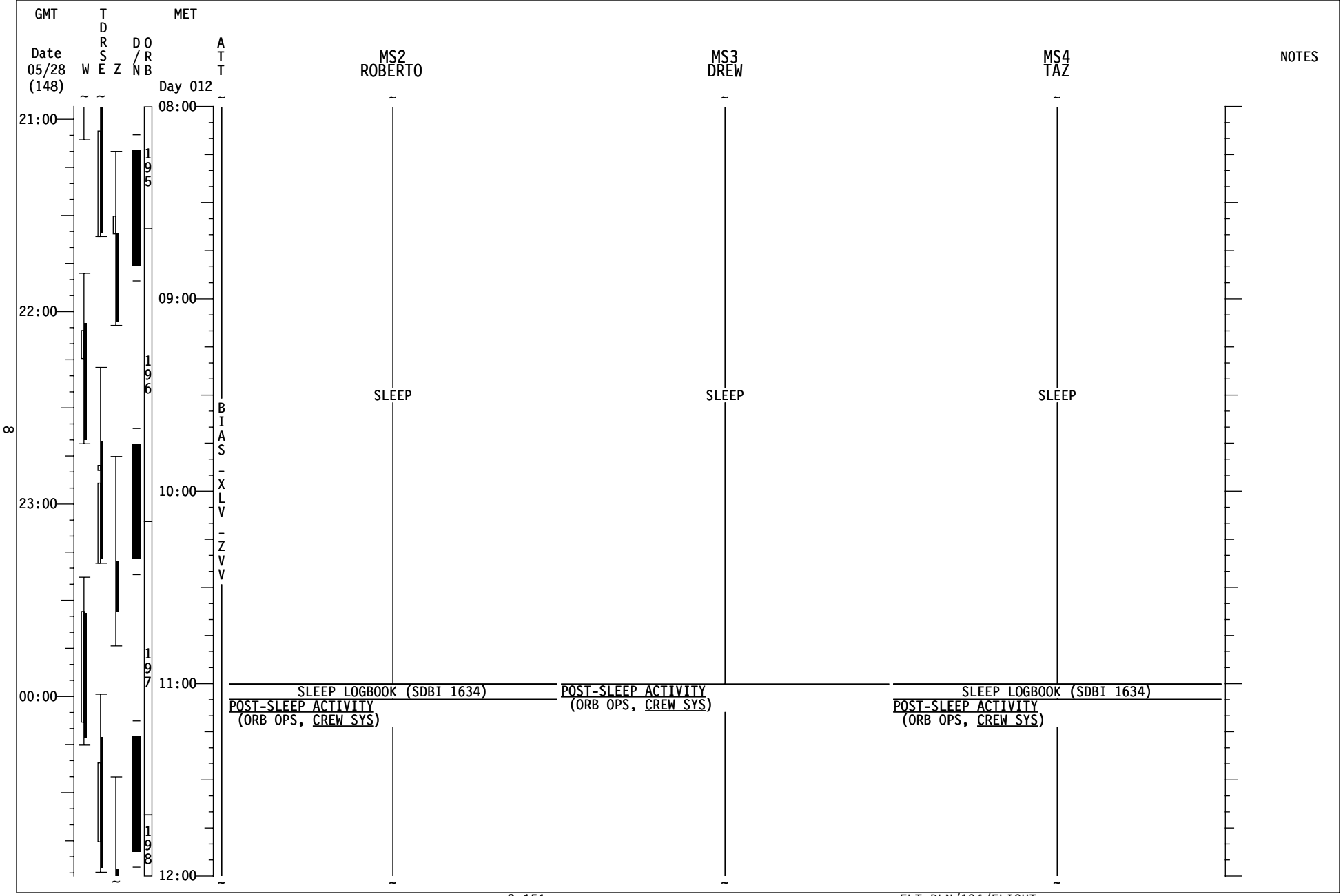
15. ATV Imagery
    ESA has requested pictures of the ATV rear thruster platform during flyaround. The deltas to step 3 of P/TV03 UNDOCK, and details of the requested photos are in MSG 160. For your reference, the shuttle will reach the -X axis (-Vbar) approximately 45-50 minutes after undock. The camera reconfiguration and ATV photos should take no more than 10 minutes to perform.

16. Replace pages 3-150 thru 3-159.

STS-134/ULF6 FD14



STS-134/ULF6 FD14



STS-134/ULF6 FD14

GMT Date 05/29 (149) | MET Day 012

01:00 / 12:00

CDR MARK

POST-SLEEP ACTIVITY (ORB OPS, CREW SYS)

[A] OCAC PWR - OFF
C5 DIRECT O2 vlv - OP
Perform the following H/W C&W Actions:
R13U H/W C&W CH 034,044 (two) - INH
MCC will TMBU all S/W limits

O2 REPRESS INIT [A]

POST-SLEEP ACTIVITY (ORB OPS, CREW SYS)

[B] C5 DIRECT O2 vlv - CL
OCAC PWR - ON

O2 REPRESS TERM (On MCC GO) [B]

PWR FILL (ORB OPS, ECLS)
Init Fill #1
Fill duration ~35min
Ref. MSG 030

PWR FILL (ORB OPS, ECLS)
Init Fill #2
Fill duration ~35min
Ref. MSG 030

[C] OCAC PWR - OFF
C5 DIRECT O2 vlv - OP

O2 REPRESS INIT [C]

PWR FILL (ORB OPS, ECLS)
Init Fill #3
Fill duration ~35min
Ref. MSG 030

[D] C5 DIRECT O2 vlv - CL
OCAC PWR - ON

O2 REPRESS TERM (On MCC GO) [D]

PWR FILL (ORB OPS, ECLS)
Init Fill #4, Fill duration ~35min
Ref. MSG 030

PLT BOX

POST-SLEEP ACTIVITY (ORB OPS, CREW SYS)

PUBLIC AFFAIRS EVENT
ISS KU AVAIL: 12:53-13:21
NODE 2: Box/Drew
Ref. MSG 155

POST-SLEEP ACTIVITY (ORB OPS, CREW SYS)

EXERCISE

IMU STAR OF OPPORTUNITY ALIGN (ORB OPS, GNC)

TRANSFER OPS
Ref. Transfer List & MSG 154

[E] MNVR (TRK) REBOOST
TG=2 BV=5 P=176 Y=0 OM=178
A12/AUTO/VERN Init TRK

H/O ATT CNTRL CMG TA TO ORB: √MCC for DAP

MNVR (TRK) REBOOST [E]

MS1 SPANKY

POST-SLEEP ACTIVITY (ORB OPS, CREW SYS)

CDRA CONNECTOR VERIFICATION
Ref. MSG 164

Install orange Snubber Alignment Guides (four) on T2

CDRA DESICCANT/SORBENT BED 201 (NOD3A4 ARS RACK)
(CDRA Book, 27-0387)
Steps 22-28
As required, reference:
CDRA DESICCANT/SORBENT BED 201 R&R NOD3A4 - APPENDIX
(CDRA Book, 25-0311)

Remove orange Snubber Alignment Guides (four) on T2

NOTES

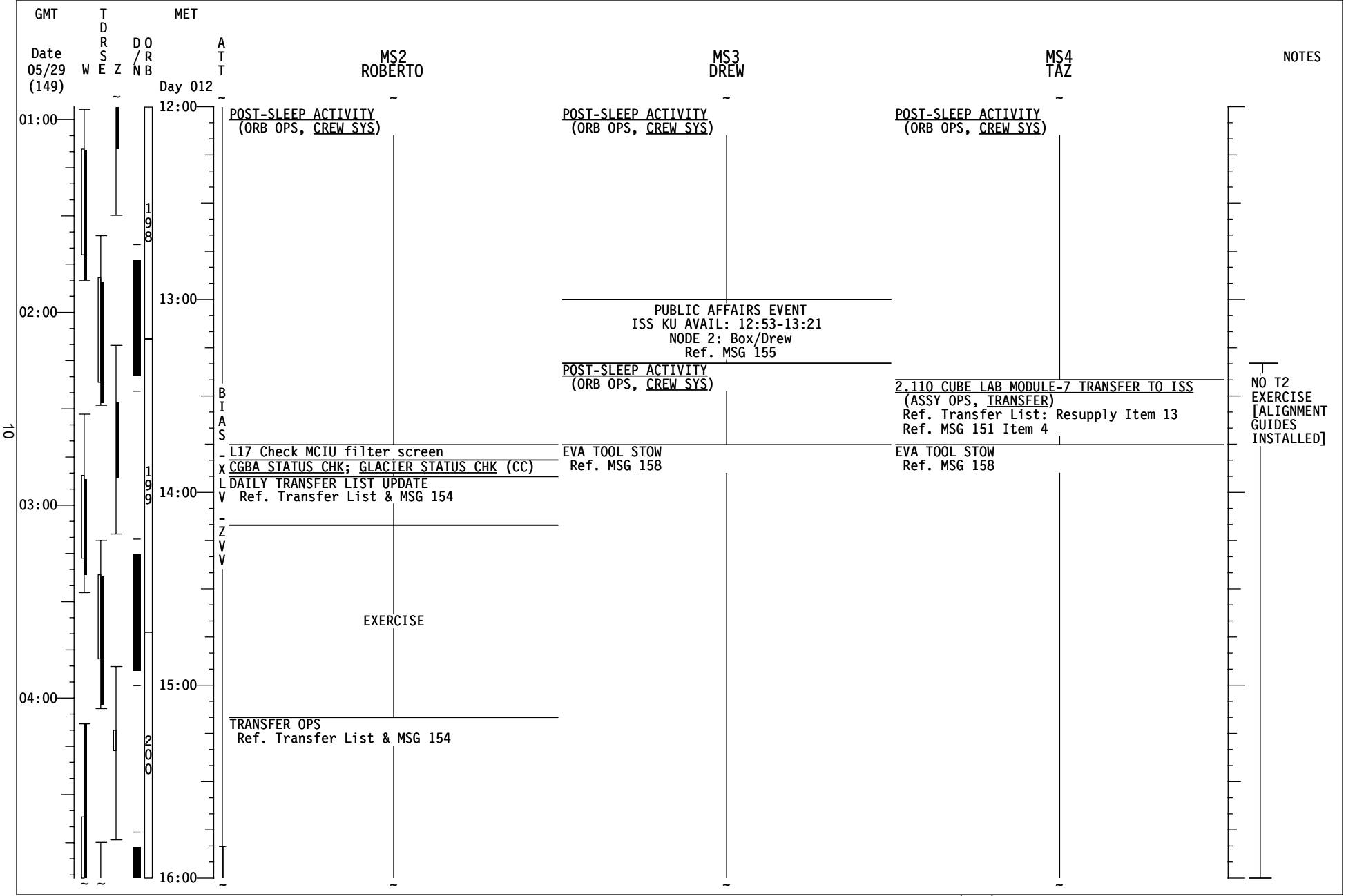
NO T2 EXERCISE [ALIGNMENT GUIDES INSTALLED]

ATT: BIAS -XLV -ZVV

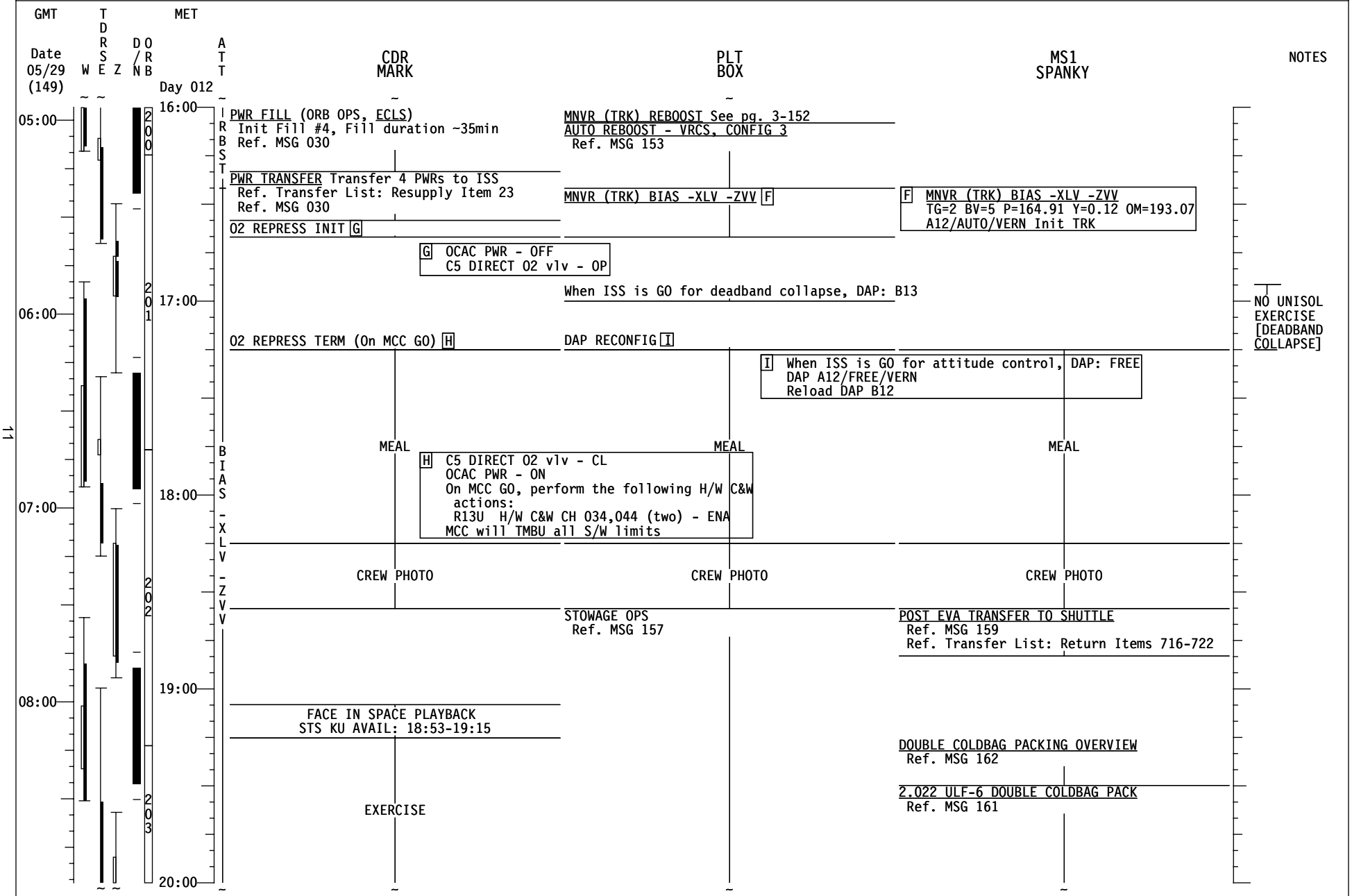
ORB: 198, 199, 200

MET: 12:00, 13:00, 14:00, 15:00, 16:00 | GMT: 01:00, 02:00, 03:00, 04:00

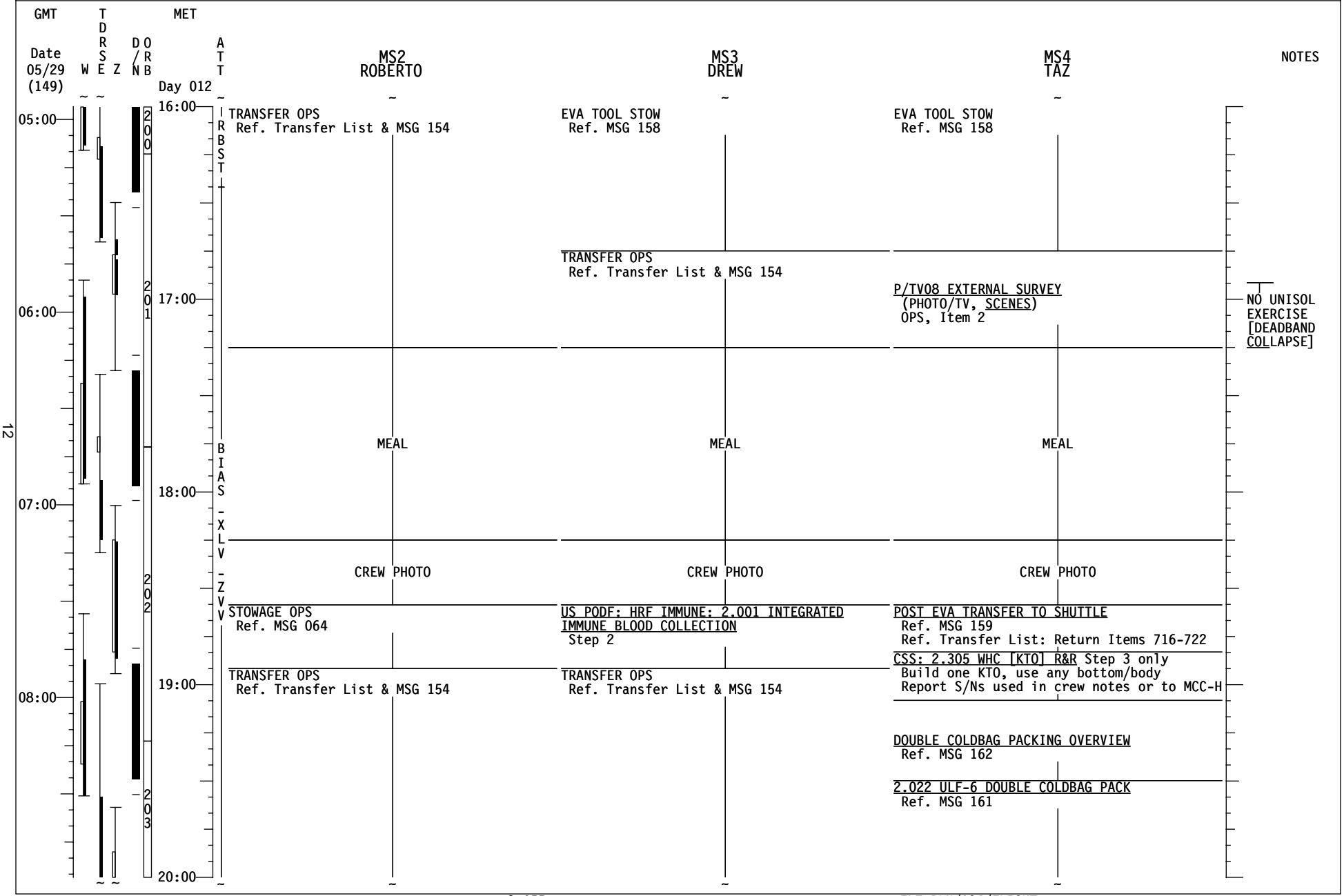
STS-134/ULF6 FD14



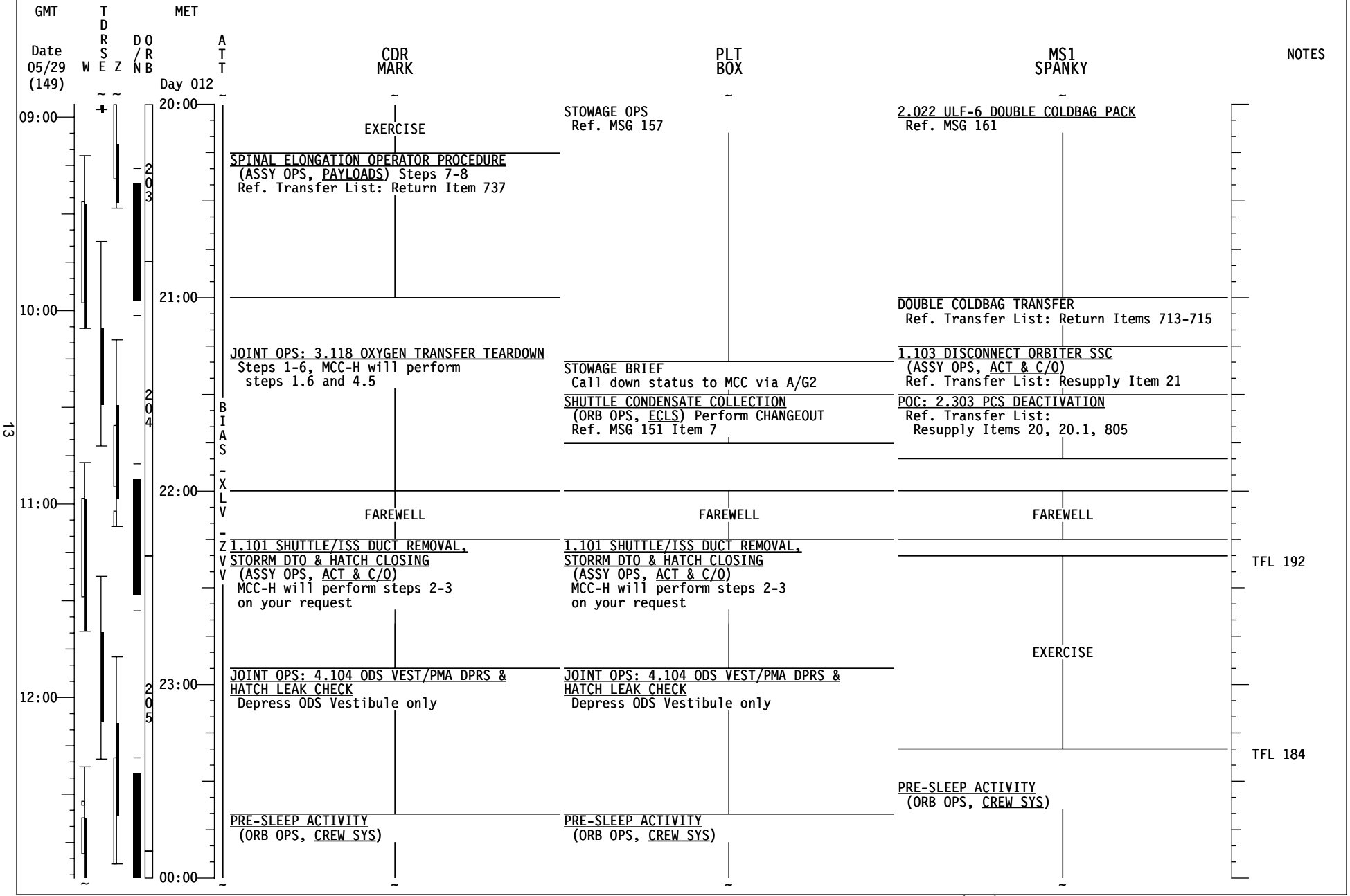
STS-134/ULF6 FD14



STS-134/ULF6 FD14



STS-134/ULF6 FD14



STS-134/ULF6 FD14

GMT Date 05/29 (149) — MET Day 012

Columns: W, TDRS E, Z, D/N, ORB, ATT

GMT: 09:00, 10:00, 11:00, 12:00
MET: 20:00, 21:00, 22:00, 23:00, 00:00

ORB: 203, 204, 205

ATT: BIAS -XLV -ZVV

14

MS2 ROBERTO

- TRANSFER OPS
  Ref. Transfer List & MSG 154
- TRANSFER BRIEF PREP
  Coordinate with transfer counterparts
- TRANSFER BRIEF
  Call down status to MCC via A/G2
- VIABLE OPERATIONS (ASSY OPS, P/L) Step 2
  Ref. MSG 151 Item 3
- FAREWELL
- SSV OUTRATE - 3
- RNDZ TOOLS CHECKOUT
  (RNDZ, RNDZ TOOLS)
- SSV OUTRATE - 2
- C/L CAMR INSTALL
  (PHOTO/TV, C/L CAMR)
  Steps 1 and 4
- CGBA STATUS CHK; GLACIER STATUS CHK (CC)
- PRE-SLEEP ACTIVITY
  (ORB OPS, CREW SYS)

MS3 DREW

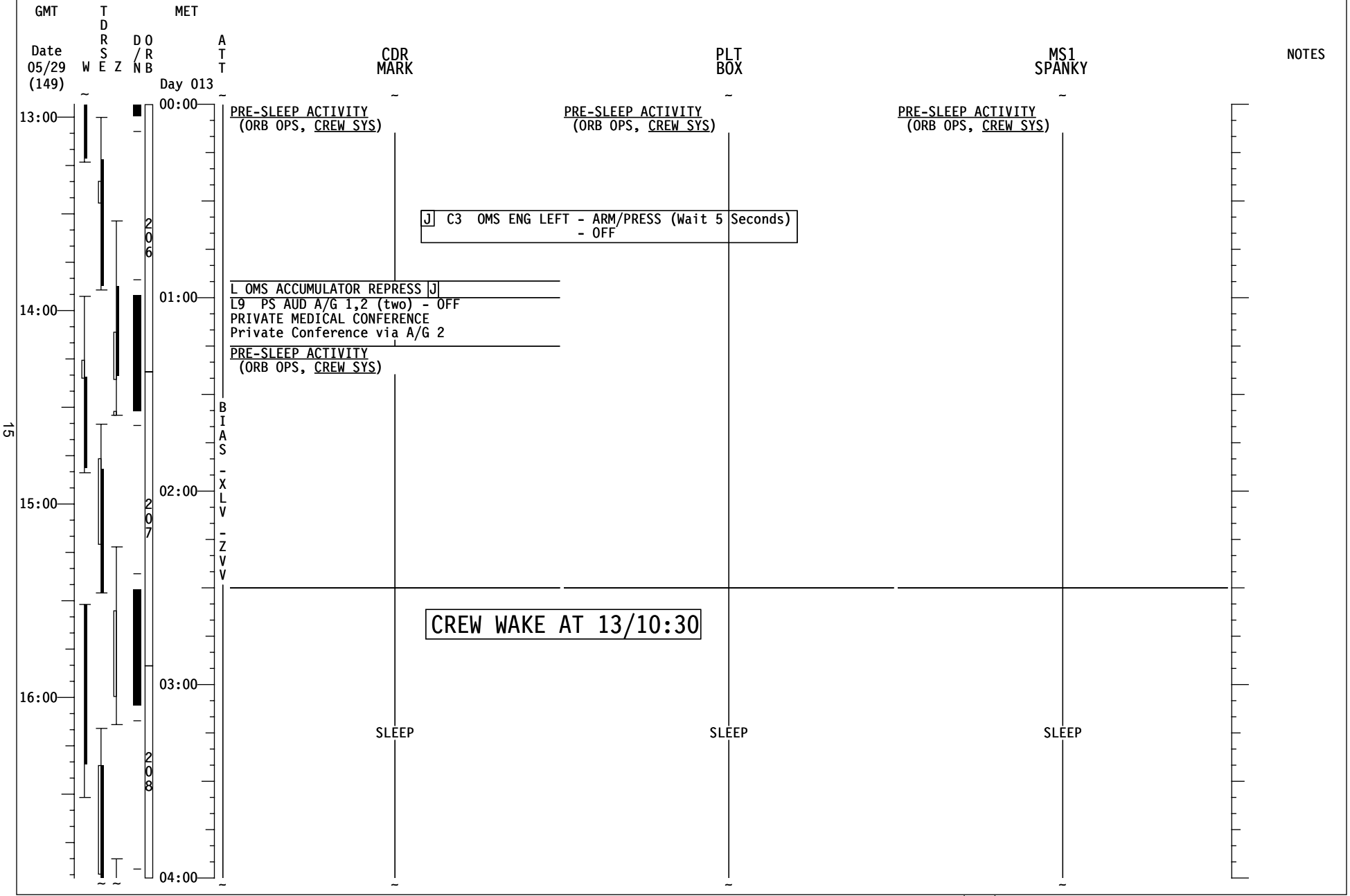
- TRANSFER OPS
  Ref. Transfer List & MSG 154
- EXERCISE
- P/TV05 ISS INTERNAL OPS
  (PHOTO/TV, SCENES)
  DEACTIVATION, Step 2
- P/TV04 INGRESS/EGRESS
  (PHOTO/TV, SCENES)
  SETUP
- FAREWELL
- P/TV10 STORRM
  (PHOTO/TV, SCENES)
  OPS
- PRE-SLEEP ACTIVITY
  (ORB OPS, CREW SYS)

MS4 TAZ

- 2.022 ULF-6 DOUBLE COLDBAG PACK
  Ref. MSG 161
- EXERCISE
- FAREWELL
- RNDZ TOOLS CHECKOUT
  (RNDZ, RNDZ TOOLS)
- C/L CAMR INSTALL
  (PHOTO/TV, C/L CAMR)
  Steps 1 and 4
- PRE-SLEEP ACTIVITY
  (ORB OPS, CREW SYS)

NOTES

STS-134/ULF6 FD14



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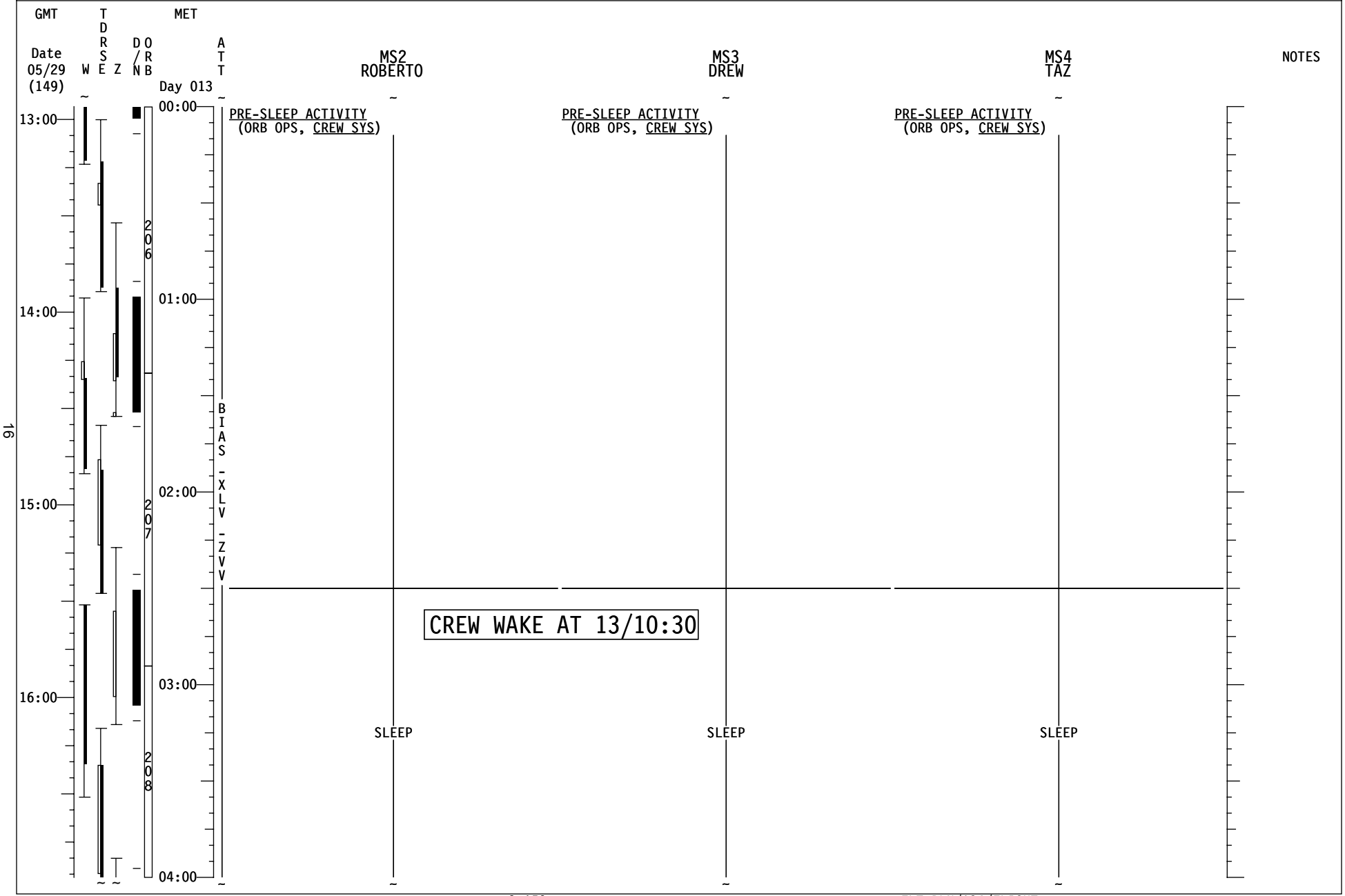


MSG 152 - FD14 MISSION SUMMARY

Good Morning Endeavour!!!!
Great work on transfer and CDRA R&R yesterday!
Today it will be finishing up transfer and R&R work and then hatch closure!

YOUR CURRENT ORBIT IS: 187 X 182 NM

NOTAMS -

EDW -	EDW 22L/04R IN USE. EDT 22R/04L EMERGENCY DAY USE ONLY.
EDW -	LAKEBED RWYS RED.
NOR -	LAKEBED RWYS GREEN.
FMH -	UNDERRUNS/OVERRUNS NOT AVAILABLE.
EDF -	RWY 06/24 CLSD.
NTU -	RWY 05R/23L CLSD.
FFA -	NOT USABLE. IN CARETAKER STATUS.
LAJ -	RWY WIDTH REDUCED TO 154' - EAST SIDE OF RWY CLSD.
BEN -	NOT USABLE. NOT SUPPORTED.
IKF -	NOT USABLE. NO AGREEMENT.

NEXT 2 PLS OPPORTUNITIES:

NOR23	ORB 203 – 12/20:10	FEW120	7	240/6P9
NOR23	ORB 218 – 13/18:58	SKC	7	230/13P23

OMS TANK FAIL CAPABILITY:

NO

LEAKING OMS PRPLT BURN:

L or R OMS LEAK: ALWAYS BURN RETROGRADE

OMS QUANTITIES(%)

L OMS	OX = 33.23	R OMS OX = 34.28	
	FU = 33.24	FU = 33.95	

FOR CURRENT QTYS, SUBTRACT INCN'T COUNTER

DELTA V AVAILABLE:

OMS	349 FPS
ARCS (TOTAL ABOVE QTY1)	44 FPS
TOTAL IN THE AFT	393 FPS
ARCS (TOTAL ABOVE QTY2)	77 FPS
FRCS (ABOVE QTY 1)	21 FPS
AFT QTY 1	78 %
AFT QTY 2	40 %

END OF PAGE 1 OF 2, MSG 152

MSG 152 - FD14 MISSION SUMMARY

SYSTEM #	FAILURE	IMPACT	WORK AROUND
STORRM DRU3	DRU3 did not initialize and is unresponsive to commands and does not send telemetry.	DRU3 processes all commands and telemetry to the docking camera. DRU3 also sends docking camera data to the PGSC.	Cannot be recovered. STORRM ops will run without the docking camera.

END OF PAGE 2 OF 2, MSG 152

MSG 153 - AUTO REBOOST - VRCS, CONFIG 3

NOTE

Allow 5 min between establishing reboost attitude and reboost start time for DAP accelerations to converge. Step 1 may be performed prior to completion of maneuver to reboost attitude.

1. Select Reboost Configuration

GNC 20 DAP CONFIG

REBOOST CFG – ITEM 8 + 3 EXEC
INTVL – ITEM 9 + 2 EXEC

2. Set up Future Reboost

GNC UNIV PTG

DURATION – ITEM 27 + 0 + 1 4 + 0 0 . 0 0 EXEC
START TIME – ITEM 1 + 1 2 + 1 6 + 0 7 + 0 0 EXEC

RBST – ITEM 25 EXEC (FUT-*)

3. Select appropriate Reboost Rotation DAP

When in attitude and prior to START TIME,

C3 DAP: A11/AUTO/VERN

NOTE

Reboost can be aborted with an Item 26 on UNIV PTG or by Selecting FREE on the DAP

4. Post Reboost Configuration

C3 DAP: A12/AUTO/VERN

Return to FLIGHT PLAN Attitude

END OF PAGE 1 OF 1, MSG 153

Roberto, Box, and Drew,

Thanks for all your great work so far! You're in the home stretch! You guys have done a great job so far.

The Transfer List Excel file, FD14_Transfer_List_STS134.xls, is located on the KFX machine in **C:\OCA-up\transfer** (and available via the **PGSC homepage**).

For ISS, the Transfer List Excel file, FD14_Transfer_List_STS134.xls, is located in **K:\OCA-up\transfer**.

Transfer Notes

- It's possible that the worklights are deployed in NOD2, so please check there to verify S/N 1015 is not there. If you still can't find it, you're GO to return one of the alternate S/N's listed in the transfer list instead. However, if you cannot find any of the preferred S/N's you are GO to pick any work light and just report the S/N.
- CWC-I: FYI, stinky, leaky CWC-I s/n 2067 will not be returning on the shuttle. It will find a ride home in the MPLM on ULF7.
- Food locker consolidation: Thank you for the information about the food you could consolidate. Please stow the empty food trays in the empty 5-MLE bag and stow the 1.0 CTB of Cady/Paolo's Crew Pref in that location. Please let us know what locker that is.
- Foam in Bag H: We believe all of the items that are designated for Bag H may fit, even with the foam in that bag. However, if they do not, you can move any foam that doesn't fit to the empty 5MLE bag.
- Empty 5-MLE bag ops: The empty 5-MLE bag that launched on top of the AL FLOOR bag should be configured with the following: empty food trays, any foam that didn't fit in Bag H, and two 0.5 CTBs of Cady/Paolo Crew Preference.

FD14 Choreography

- **Resupply Items 24, 25, 801, 808, & 809** (ATV & Unpack Lists, STS Trash, Draeger Tube, and Handheld Mic)
- **Return Items 700-708, 738, 912, 915-917** (5, 10MLE and Seat 7 bags, 10.5MM Lens, Worklights, 28mm Lens, and Crew Pref CTBs)
- **Spanky: Resupply Item 20, 20.1, 21, 805** (AFD PCS & Power Supply, spare PCS HD & ISS SSC 20) (timelined)
- **Mark: Resupply Item 23** (PWR) (timelined)
- **Ron: Return Items 725, 726** (Integrated Immune Blood & Saliva) (timelined)
- **Spanky, & Taz: Return Items 716-722** (EVA Items) (timelined)
- **Spanky: Return Items 713-715** (Double Cold Bags) (timelined)
- **Taz: Resupply Item 13** (Cube Lab 7) (timelined)
- **Mark: Return Item 737** (Spinal Hardware) (timelined)

Change Pages

Please incorporate changes as follows:

In the Transfer List **RESUPPLY** tab

Add page 13

In the Transfer List **RETURN** tab

Replace pages 1, 4, 8, 11

Change Details

Resupply Item 808: New Item

Resupply Item 809: New Item

Return Item 401.1: Item deleted. Activity is no longer going to be performed.

Return Item 708: Updated Notes

Return Item 738: Updated Notes

Return Item 912: Updated Notes

Return Item 914: New Item. This has already been transferred, so we checked it off complete. This is just the official addition to the transfer list to follow up with what was already done.

Items 915 - 917: Adding Cady & Paolo's crew pref return

MSG 156 - FD13 Crew Choice Downlink Opportunities

Please allow 1-2 min to lock up on K-Band. Check with MCC before starting playback.

Post-Sleep Morning of FD14

TDRS	AOS	LOS	Delta (min)	Notes
W-171	12/11:00	12/11:11	11	
E-TDS	12/11:25	12/11:49	24	
W-171	12/12:14	12/12:45	31	
E-TDS	12/12:54	12/13:25	31	Overlaps PAO Event. PAO Event uses ISS resources.

Pre-Sleep Evening of FD14

TDRS	AOS	LOS	Delta (min)	Notes
W-171	12/23:42	12/23:52	10	
E-TDS	13/00:24	13/00:30	6	
E-TDS	13/01:53	13/02:16	23	

END OF PAGE 1 OF 1, MSG 156

Roberto and Box,

Welcome to your final day of Stowage Ops! We appreciate all of the hard work you both have put in. We have really enjoyed working with you both! Thank you for finding our TSR – you made a lot of people in Houston and Toulouse very happy!

The plan for today is to focus on wrapping up ATV. You'll start by deploying the TSR. This activity requires two crew members,so you are both scheduled for 20 minutes immediately after the Crew Photo. Afterwards, Roberto will return to Middeck Transfer until that is complete. After the TSR is deployed, you can begin filling it with the excess foam launched on ULF6. We also need confirmation that one of the RFTA foam caps made it back to the PMM on FD10. Simply work through the ATV Cargo Ops section below and call down if you have any questions.

If you complete ATV Cargo Ops and still have more time, please continue to the remaining Stowage Task. Thanks again for all your hard work and have a safe trip home!

Good luck!!

- *ATV2/ ULF6 ISO Team: Misty, Nikhail, Neisha, Kelly, Mike, & Jaclyn*

ATV Cargo Ops

1. Deploy 2nd TSR (2 crew required)

    a. Retrieve 1.0 CTB S/N 1467 that you previously temp stowed in Node 3 – this contains the TSR and seat track studs needed to deploy the TSR. There will also be ballast plates in this bag. You can restow the ballast plates at ATV2D2_C2. The empty 1.0 CTB can be stowed at NOD3A2.
    b. Execute per the five pages that follow, titled **TEMPORARY STOWAGE RACK (TSR) INSTALLATION**.

1.200 TEMPORARY STOWAGE RACK (TSR) INSTALLATION

(ATV/ALL/FIN 1) Page 1 of 6 pages

OBJECTIVE:

Install Temporary Stowage Racks (TSRs).

LOCATION:

ATV Empty Bay (as indicated on TSR label)

CREW:

Two

DURATION:

20 minutes per TSR

EQUIPMENT:

Seat Track Studs (eighteen)

TSR CTBs

NOTE
Do not remove the thermal blanket installed on the rear side of the empty Rack bay (Refer to Figure 1).

Figure 1. Thermal Blanket.

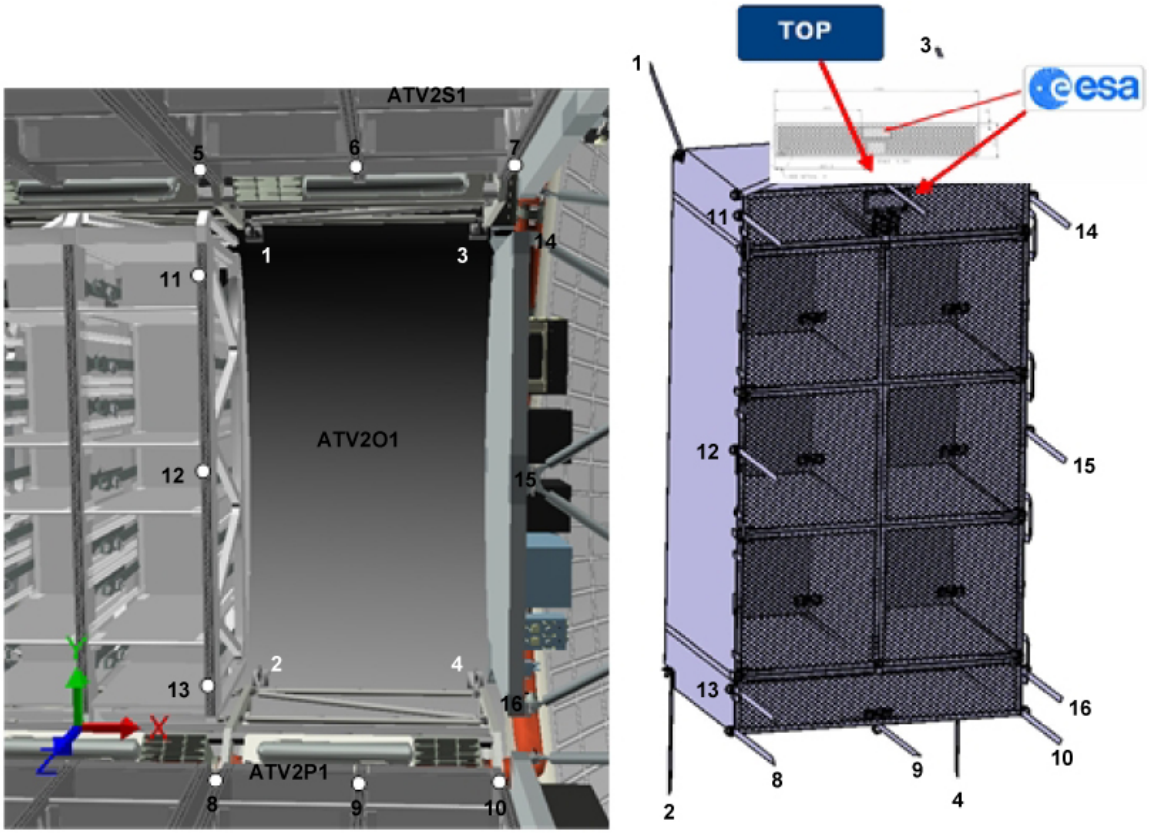
1. Verify adapter plates have been removed from adjacent Racks.
   Refer to 1.100 ATV RACK ADAPTER PLATE REMOVAL (SODF: ATV CARGO OPS: INITIAL SETUP).

2. Install Seat Track Studs (nine per TSR) on adjacent Racks.

   2.1 For TSR installation at ATV2O1, refer to Figure 2.

1.200 TEMPORARY STOWAGE RACK (TSR) INSTALLATION

(ATV/ALL/FIN 1) Page 2 of 6 pages



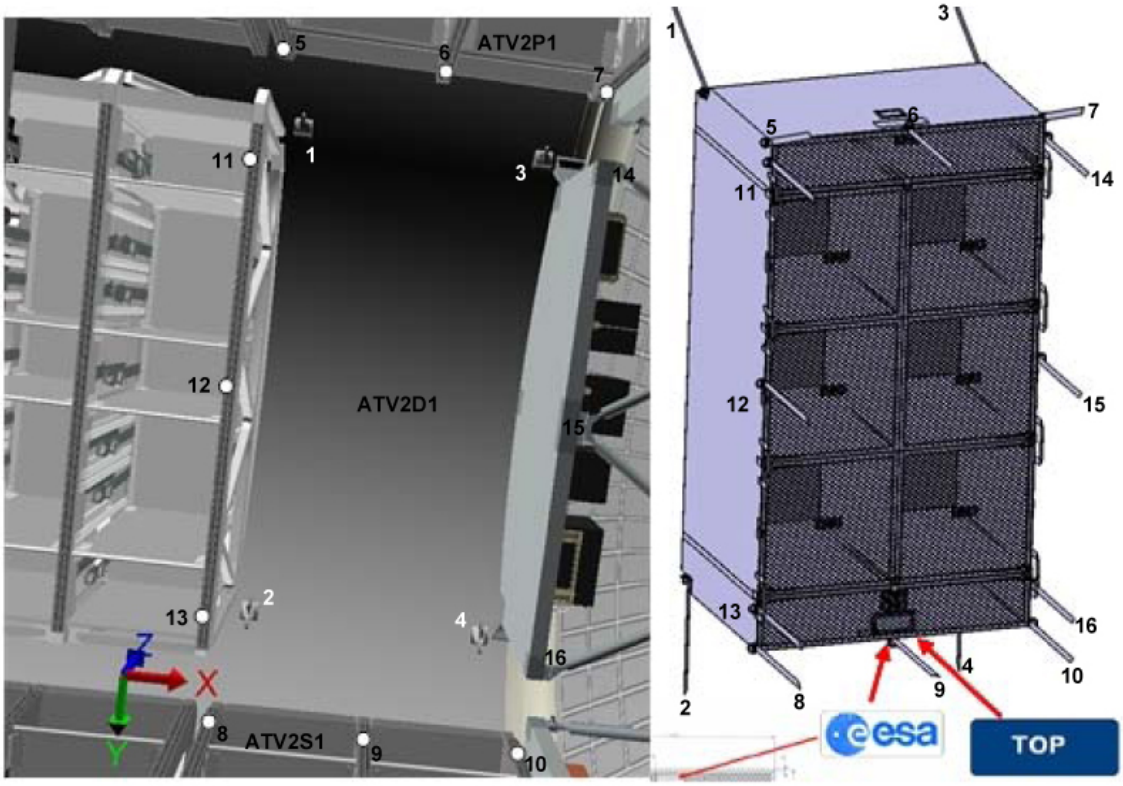
ATV INTEGRATED CARGO CARRIER (ICC) INTERFACES at ATV2O1
Rack I/F brackets (1, 3)
Rack I/F ball bearings (2, 4)
RING, SEAT TRACK STUDS (5, 6, 7, 8, 9, 10, 11, 12, 13)
Equipment panel I/F brackets (14, 15, 16)

Figure 2. TSR Installation at ATV2O1.

2.2 For TSR installation at ATV2D1, refer to Figure 3.

1.200 TEMPORARY STOWAGE RACK (TSR) INSTALLATION

(ATV/ALL/FIN 1) Page 3 of 6 pages



ATV INTEGRATED CARGO CARRIER (ICC) INTERFACES at ATV2D1
Rack I/F brackets (1, 3)
Rack I/F ball bearings (2, 4)
RING, SEAT TRACK STUDS (5, 6, 7, 8, 9, 10, 11, 12, 13)
Equipment panel I/F brackets (14, 15, 16)

Figure 3. TSR Installation at ATV2D1.

3. Unpack TSR(s) from CTB.
4. Verify bay location and align TSR using label.

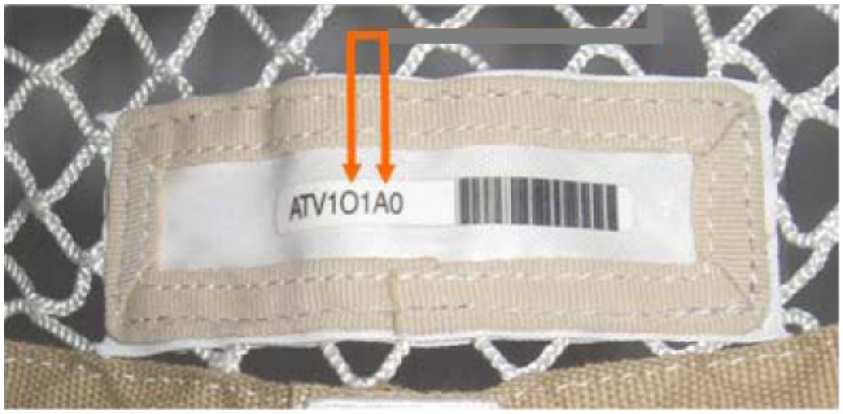


Figure 4. TSR Label.

1.200 TEMPORARY STOWAGE RACK (TSR) INSTALLATION

NOTE

Start with rear side attachments. Do not tighten rear straps or front straps will be too short.

5. Connect the TSR Nomex straps (16) to the corresponding ATV interfaces as shown in Figures 2, 3, 5 to 9.

Figure 5. Rear Attachment.

Figure 6. Front Attachment.

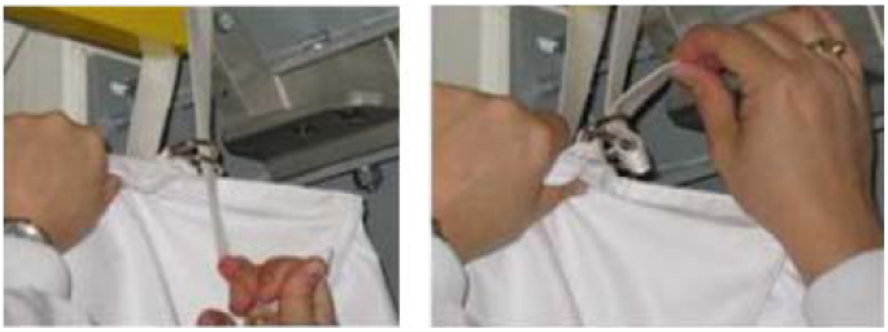


Figure 7. Use of D-Ring.

1.200 TEMPORARY STOWAGE RACK (TSR) INSTALLATION

(ATV/ALL/FIN 1) Page 5 of 6 pages

Figure 8. Start at Rear.

1.200 TEMPORARY STOWAGE RACK (TSR) INSTALLATION

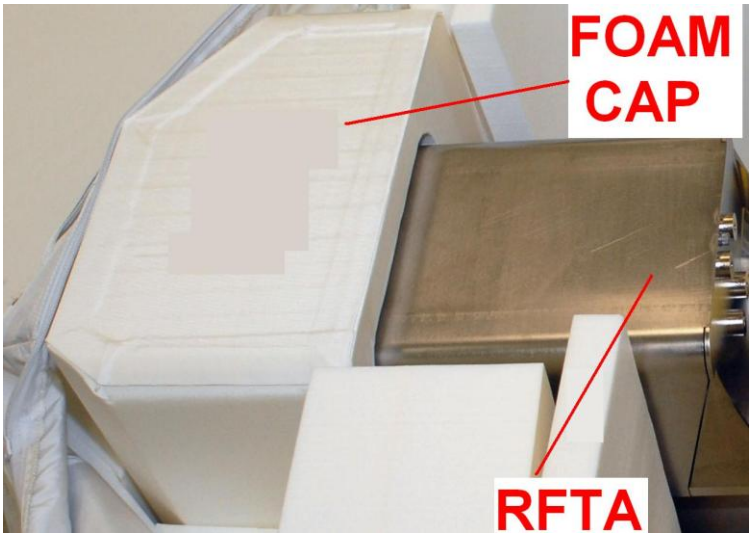
Figure 9. Tighten Straps to Finish.

2. Trash ULF6 foam

    a. Trash items 203 – 206 per the table below. If you have any difficulty with the stowage locations given, please let us know. Foam is allowed to protrude the rack front as long as it is secured well, and won't free-float.

Item #	Item Name [Part Number]	QTY	Current Location	Final Location	Notes
203	FOAM from FCPA [FK_0563_1]	2	**PMM1_ Endcone**	**ATV2D1_A1**	
204	FOAM from Hydrogen Dome ORU [FK_0348_4]	5		**ATV2D1_A2 and/or ATV2O1_D1**	This foam currently contains the Hydrogen Dome. **REMOVE** the Hydrogen Dome and leave in the **PMM1_Endcone**.
205	FOAM from ETVCG [FK_0577_1]	2		**ATV2D1_C1**	
206	FOAM from MCA [FK_0568_1]	2			

3. Confirm RFTA foam cap was stowed in PMM
    a. We need to keep one of the RFTA foam caps on-board. Per the Stowage Brief we had with Roberto on FD10, he was about to take 1 RFTA foam cap and M-01 Bag S/N 1022 back to the PMM. Can you confirm that action was completed?



        i. If not, we would like you to retrieve one of the caps from another RFTA. We believe that the most accessible RFTA foam caps are stowed on the RFTA in ATV2O2_B1 or ATV2D2_B2.

        ii. **REPORT** the S/N of the RFTA from which you removed the foam cap to **MCC-H**.

        iii. Take the RFTA foam cap to PMM1P3 and stow it inside the M-01 Bag S/N 1022, B/C 004375J.

Stowage Task

1. Relocate and consolidate items from the PMM and various Payloads hardware (10 hours)
    a. This activity will have you put away items hanging out in the PMM Endcone and consolidate other similar hardware.
    b. Execute per 28-0057 (MSG 134-130): PMM Endcone and Payloads Cleanout.
        i. We have one Pen & Ink update for you. Item #36, the Tape and Velcro Caddy will be restowed during EVA Tool Stow on FD14. So, please draw a big line thorugh this item.
        ii. Items #1-10 might be in the very back of the Endcone, so if you have trouble finding those items, feel free to move on to the remaining items.

OVERVIEW: This message is designed to stow the EVA tools and hardware from ULF-6 and gather tools for ULF-7. This message is also color coded so you can easily retrieve items based on their CTB location. All items of a given color are going or coming from the same CTB so you can quickly scan through the list and see when you are going into each CTB.

Note: Items 75-82b, 87, and 116 are required prior to the EVA Transfer to Shuttle activity

PROCEDURE:

1. **CONFIRM that there is a D-Ring Extender on the A/L D-Ring**
2. **REMOVE all tethers and D-ring extenders from all bags (Except IV Bag), MWS, and suits and STOW them on the tether staging area.**
3. **INSPECT all RETs and AETs for fraying or damage**
4. **RELOCATE all tools from the crewlock and ORU bags used during ULF-6 into the Mesh Bag: DONE TOOLS or temp stow for re-stow.**
   EXCEPTION: leave the 1553 cable inside the NOD3 cable bag (remove the fish-stringer).
5. **STOW any wire ties you consider re-usable in the ziplock at A/L1O0. REPORT the total number of remaining wire ties (short & long) at A/L1O0 so we will know if we need to launch more.**
6. **REMOVE any labels from Crewlock Bags and stow in Crewlock endcone.**
7. **CONFIRM the EVA 1, 2, 3, and 4 Tools Mesh Bags are empty; Re-LABEL 3 of them "ULF-7 EVA Tools," "Russian Tools," and "EFGF for ULF7 Return"**
8. **COMPLETE Tables A - K.**
9. **Remove Labels from all empty Mesh Bags and stow per crew pref**
10. **REPORT to MCC-H when activity is complete, the requested S/N information, and any deltas.**

For help identifying the correct S/N's, reference 2.220.100 EVA Tool Serial Number Reference (SODF: EVA TASK).

Table A: Retrieve the Following

Item #	R	Location	Item	QTY	P/N	S/N	B/C	Final Location	Notes
1		**A/L1O0_Behind Closeout**	1.0 CTB: EVA Miscellaneous Tools #2	1	SEG33111836-304	1161	004155J	**A/L1O0_Behind Closeout**	These CTBs are being retrieved so tools can be added and removed without having repeatedly access the closeout. Once this matrix is complete the CTBs can be restowed.
2			1.0 CTB MWS Hardware	1	SEG33111838-301	1013	-		
3			1.0 CTB: EVA Miscellaneous Tools #1	1	SEG33111838-307	1075	-		
4			1.0 CTB: QD Trainer	1	SEG33111836-304	1258	010594J		
5		**JLP1A2_D**	3.0 CTB: SARJ Hardware	1	SEG33111840-303	1061	-	**JLP1A2_D**	
6		**A/L1O0_Behind Closeout Ziplock**	Wire Ties (Short & Long)	As Needed	-	-	-	**A/L Crewlock Deployed**	**Report** Qty Used
7		**A/L Crewlock Deployed**	ORU Transfer Bag (Med)	2	SEG33114494-309	1004, 1005	-	**A/L Crewlock Deployed**	
8			Mesh Bag: Done Tools	1	-	-	-	**Crew Pref**	Mesh Bag should be empty by end of Matrix. Report any remaining items to MCC-H
9		**A/L1O0 Deployed**	S0 to NOD3 Cable Bag Channel 1/4	1	684-014023-0001	0001	-	**A/L Crewlock Deployed**	**Verify** NOD3 Bag contains 1553 Cable Bundle: [FGB PDGF Ch A Data Cable W4495 FGB PDGF Ch B Data Cable W4497] 684-014495-0001 684-014497-0001
10		**A/L1O_Attic**	ORU Transfer Bag (Large)	1	SEG33114494-307	Any	-	**A/L Crewlock Deployed**	**Report S/N**

Table B: ULF-7 EVA Tools Mesh Bag

Item #	R	Location	Item	QTY	P/N	S/N	B/C	Final Location	Notes
11		**A/L Crewlock: Crewlock Bag #4 (Mesh Bag: Scoops)**	Square Scoop	2	SEG33106330-301	1001, 1002	-	**Mesh Bag: ULF-7 EVA Tools**	
12			Round Scoop	1	SEG33107677-301	1001	-		
13		**A/L Crewlock: Staging Bag**	7/16 x 2" Rigid socket	1	SEG33106930-301	1008	-		**Stow** on ERAD
14		**A/L1O0_Behind Closeout, CTB #1161**	Enhanced Right Angle Drive (ERAD)	1	SEG33120447-301	1002	-		
15			EVA Ratchet	1	SEG33106927-303	1015	-		**Keep** 2" socket installed on ratchet
16			7/16 x 2" Rigid Socket	1	SEG33106930-301	1006	-		**Stow** on EVA Ratchet. May already be on ratchet in CTB.
17			7/16 x 9" Rigid Socket	1	SEG33106930-305	1012	-		**Stow** on Socket Caddy
18		**Mesh Bag: Done Tools**	Handrail Gap Spanner	1	SEG33109930-307	-	-		42" - 72" Gap Spanner
19			Socket Caddy Assy	2	SEG33106938-301	1010, 1053	-		**Remove** 5/8-in sockets (two) and stow in Done Tools
20			Round Scoop	1	SEG33107677-301	1002	-		
21			Worksite Interface Adapter [WIF Adapter w/PIP Pin]	1	SEG33106863-309	1013 or 1015	-		
22			Wire Tie Caddy Assy	1	SEG33111586-301	1003	-		**Configure** (3) Short and (6) Long Wire Ties. **Reference** Long Wire Tie configuration section below.
23			Vise Grip Pliers	1	SEG33106922-301	1001	-		
24			Pin Straightener Assy	1	SEG33106913-301	1001	001948J		
25			Probe	1	SEG33113644-305	1001	-		
26			1/4"X1/2" Allen Driver (Short T-handle Tools)	2	SED39127091-301	1001, 1003	-		
27			1" QD Cap Removal Tool	1	GD2043325		-		**Report S/N**

Table C: Russian Tools Mesh Bag

Item #	R	Location	Item	QTY	P/N	S/N	B/C	Final Location	Notes
28		**Mesh Bag: Done Tools**	Рукоятка [PAMA Cheater Bar]	1	77КМ.1100-40	17501	00042319R	**Russian Tools Mesh Bag**	
29			Ключ-трещотка [Russian Ratchet Wrench]	2	17КС.Б9307-220	-	00041473R N/A	**Mesh Bag can be delivered to any Russian Crew**	
30			Фал с поводком [Russian Adjustable Tether]	2	17КС.Б9351-1100	-	-		
31			Фал страховочный [Russian Fixed Tether]	1	17КС.Б9351-900	-	-		

Table D: Verify EV1 MWS

Item #	R	Location	Item	QTY	P/N	S/N	B/C	Final Location	Notes
32		**EV1 MWS**	MWS Baseplate [Modular Baseplate Assembly]	1	SEG33110490-305	1003	-	**EV1 MWS**	
33			Body Restraint Tether [BRT Assembly]	1	SEG33110400-309	1008	-		
34			MWS T-Bar	1	SEG33110493-305	1003	-		
35			Small EVA Trash Bag	1	SEG33106678-301	1005	-		Left, Outer location on T-Bar **Verify** empty and zipped
36			Swing Arm Assy, RH	1	SEG33110491-307	1004	-		
37			PGT	1	GE1557000	1002	-		
38			7/16 x 6" Wobble	1	SEG33106931-301	1019	-		**Stow** on PGT

Table E: Verify EV2 MWS

Item #	R	Location	Item	QTY	P/N	S/N	B/C	Final Location	Notes
39		**EV2 MWS**	MWS Baseplate [Modular Baseplate Assembly]	1	SEG33110490-305	1006	-	**EV2 MWS**	
40			Body Restraint Tether [BRT Assembly]	1	SEG33110400-309	1021	-		
41			MWS T-Bar	1	SEG33110493-305	1004	-		
42			Small EVA Trash Bag	1	SEG33106678-301	1004	-		Left, Outer location on T-Bar **Verify** empty and zipped
43			Swing Arm Assy, RH	1	SEG33110491-307	1003	-		
44			PGT	1	GE1557000	1004	00008720J		
45			7/16 x 6" Wobble	1	SEG33106931-301	1018	-		**Stow** on PGT

Table F: De-Configure EV3 MWS

Item #	R	Location	Item	QTY	P/N	S/N	B/C	Final Location	Notes
46		**EV3 MWS**	MWS Baseplate [Modular Baseplate Assembly]	1	SEG33110490-305	1023	-	**A/L1O0_Behind Closeout, CTB #1013**	
47			Body Restraint Tether [BRT Assembly]	1	SEG33110400-309	1001	-		
48			MWS T-Bar	1	SEG33110493-305	1029	-		
49			Swing Arm Assy, RH	1	SEG33110491-307	1002	-		
50			Small EVA Trash Bag	1	SEG33106678-301	1006	-	**A/L1O0_Behind Closeout, CTB #1075**	**Verify** empty and zipped

34

Table G: Empty EVA Done Bag

Item #	R	Location	Item	QTY	P/N	S/N	B/C	Final Location	Notes
51		**Mesh Bag: Done Tools**	1/4"X1/2" Allen Driver	1	SED39127091-303	1018	-	**A/L1O0_Behind Closeout, 1.0 CTB #1161**	Long T-handle Tool, 8"
52			1/4"X1/2" Allen Driver	1	SED39127091-301	1002	-		Short T-handle Tool
53			Loop Pin Extractor Puller	1	V628-650998-001	104	-		
54			5/8 x 7.8" Rigid	2	SEG33106934-301	1009, 1010	-		
55			EVA Scissors	1	-	-	-		
56			Large EVA Trash Bag	1	SEG33106937	1001	-	**A/L1O0_Behind Closeout 1.0 CTB #1075**	**Verify** empty
57			MUT End Effector Assy	1	SEG33106890-303	1001	-	**A/L1O0_Behind Closeout 1.0 CTB #1013**	
58			1.0 Inch BDT	1	SEG33114987-301	1001	-	**A/L1O0_Behind Closeout 1.0 CTB #1258**	
59			QD AKT	1	SEG33114982-301	1005	-		
60			1 N2 Vent Tool	1	1F98596-1	02	-		
61			SMALL QD BAIL LEVER	1	SDG33113838-703	1003	-		
62			Torque Wrench	1	SEG33106948-301	1008	-	**Torque Wrench Bag s/n 1002**	**Verify** Torque Wrench set to 20 ft-lb
63			Torque Wrench Bag	1	SEG33110183-301	1002	-	**A/L1O0_Behind Closeout**	**Verify** Torque Wrench in Bag
64			SPDM Pry Rod	1	51602-9315-551	-	-	**A/L1O1 M-02 Bag #1038**	
65			PDGF Handling Aid (PUMAA)	1	260213-207676-551	201	PUMAA201J	**A/L Crewlock Crewlock Bag #4 (Mesh Bag: Scoops)**	
66		**PMM1A3**	P-SARJ Cover 17 - And Bolts	1	1F83113 (frame) 1F26520 (IA)	-	-	**JLP1A2_D 3.0 CTB #1061**	4 SARJ bolts located inside
67		**Mesh Bag: Done Tools**	Dry EVA Wipes	5	SED33116397-703	-	-		**Collect** all Wipes including from Wipe Caddy. **Remove** all tape from handles. **Report** quantity stowed to **MCC-H** (expect 5)
68			EVA Wipe Caddy	1	SEG33120807-301	1004	-		
69			EVA Gap Gauge (30/35)	1	SED33118505-302	1006	-		

70			Grease Gun Ziplock Bags	4	-	-	-		2 Straight Nozzle Grease Guns and 2 J-hook Nozzle Grease Guns
71			Pry Bar	1	SDG33106924-001	1004	-	**A/L Crewlock: Staging Bag**	
72		**Mesh Bag: Done Tools**	Grapple Shaft Cover	1	51618-1216-3	202	-	**PMM1F2_AFT M-01 Bag #1017 B/C 004366J**	
73			Video Signal Converter (VSC) Cover [VSC Protective Cover (soft)]	1	51617-0076-1	202	VSCPC202C		Do Not Bend or Fold
74			Video Signal Converter (VSC) Blanket [VSC Thermal Blanket (soft)]	1	51617-3002-01				
75			OIH Handrails (HR's 0270 and 0271)	2	SEG33106351-301	-	-	**Tools Transfer Bag (For ULF6 Transfer to STS)**	
76			EWIS Cable	1	1F15448-1				
77			EWC Cable caps size 21 (CAP, PROTECTIVE)	4	NZGL-PPC-N-21-R	-	-		from P1,P2,P3,P4
78			EWC Antenna Caps - size 21	2	NZGL-RPC-N-21-0-LP	-	-		
79a			EWC Cable Plug size 25 (CONNECTOR, COVER)	1	NZGL-RPC-N-25-0-LP	-	-		from J16A
79b			EWC Cable Cap size 25 (CAP, PROTECTIVE)	1	NZGL-PPC-N-25-R	-	-		from P16A
80			FO Video Cap	1	NZGL-PPC-N-15-R	-	-		
81			Hubble: 90 deg Connector Tool	**1**	10159-10036-02				May already be in Tools Transfer Bag
82a			Ziplock: "Sample Wipes" (#'s 7,9, & 11)	**3**	Wipes: SED33116397-703				May already be in Tools Transfer Bag
82b			Ziplock: Used Non-Sample Wipes (#s 1, 4, 6)	1	Wipes: SED33116397-703	-			
83			MSS Camr Cover Bag	1	51612-5016-551	-	-	**A/L Deployed: 1.0 CTB # 1078**	(38309-51612-5016-551 is the CLA lens cover MLI)(51612-5016-551 is the MSS camera cover bag)

Table H: Confirm Staging Bag

Item #	R	Location	Item	QTY	P/N	S/N	B/C	Final Location	Notes
84		**A/L Crewlock: Staging Bag**	Safety Tether Pack [85ft-85ft]	1	SED33116109-307	1002, 1004	-	**Tether Staging Area**	
85			Adjustable Fuse Tether [Fish Stringer #1]	1	SED39127200-705	1011	-	**A/L Crewlock: Staging Bag**	
86			Wire Tie Caddy Assy	1	SEG33111586-301	1005	-		**Configure** (6) Short and (3) Long Wire Ties. **Reference** Long Wire Tie configuration section below.
87			Tape and Velcro Caddy	1	SED33104207-301	1005	-	**Tools Transfer Bag (For ULF6 Transfer to STS)**	
88			PGT	1	GE1557000	1007	-	**A/L Crewlock: Staging Bag**	
89			7/16 x 6" Wobble	1	SEG33106931-301	1007	-		**Stow** on PGT
90			EVA Ratchet	1	SEG33106927-303	-	-		
91			Worksite Interface Adapter [WIF Adapter w/PIP Pin]	1	SEG33106863-309	1013 or 1015	-		
92			LDTD Tether	2	SEG33113860-301	1006, 1008	-		
93			Adjustable Fuse Tether [Fish Stringer #2]	1	SED39127200-705	1032	-		
94			Connector Cleaner Tool Kit	1	SJG33111630-301	1010	-		
95		**Mesh Bag: Done Tools**	Pry Bar	1	SDG33106924-001	1004	-		
96		**A/L Crewlock: Staging Bag**	Needle Nose Pliers	1	SEG33106921-301	1007	-		
97			MMWS Key Strap Assembly	1	SEG33110812-301	1008	00008653J		Should be wire tied to strap.
98		**PMM1P4_D2 Bubble Wrap Bag**	Tape and Velcro Caddy	1	SED33104207-301	1007	-		Not the Ziploc bag labeled "ITCS Coolant Sampling Adapter"

Staging Bag:

- □ Fish Stringer #1 - Item #85
  - □ Wire Tie Caddy - Item #86
  - □ PGT - Item #88
    - □ 7/16 (wobble) Socket-6" ext - Item #89
  - □ EVA Ratchet - Item #90
  - □ Spare WIF Adapter w/PIP pin - Item #91
  - □ Tape and Velcro Caddy - Item #98
- □ 2 – Long duration tie-down tether - Item #92
  - □ Fish Stringer #2 - Item #93
    - □ Connector Cleaner Tool Kit - Item #94
    - □ Pry Bar - Item #95
    - □ Needlenose Pliers - Item #96
    - □ MWS Key Strap Assy (on wire tie, to strap) - Item #97

REPORT any additional items found to MCC-H.

Table I: Confirm IV Bag

Item #	R	Location	Item	QTY	P/N	S/N	B/C	Final Location	Notes
99		**A/L Crewlock: IV Bag**	ISS Contamination Detection Kit	1	SJG39136050-302	1002	-	**A/L Crewlock: IV Bag**	**CONFIRM** contents and configuration of IV Bag. Black RETs stay in this bag (not for EVA).
100			Towel [Wrapped with short wire tie]	2	-	-	-		
101			Eq Hk RET [Sm-Sm]	1	SEG33106164-381	4062	-		
102			SAFER Hand Controller Mount [DCM Plug]	1	SV1006962-2	00005	00051198J		
103			SAFER Hand Controller Mount [DCM Plug]	1	SV1006962-2	00006	00059995J		
104			Eq Hk RET [Sm-Sm]	1	SEG33106164-381	4063	-		
105			ISS GP Caddy	1	SEG33113531-301	1008	-		
106			Adjustable Thermal Mitten	1	0106-811540-03	'022	EMUG15J		
107			Adjustable Thermal Mitten	1	0106-811540-04	'022	EMUA16J		
108			ISS GP Caddy	1	SEG33113531-301	1010	-		
109			Adjustable Thermal Mitten	1	0106-811540-03	'023	EMUG19J		
110			Adjustable Thermal Mitten	1	0106-811540-04	'023	EMUG20J		
111			Eq Hk RET [Sm-Sm]	1	SEG33106164-381	4073	-		
112			Socket Caddy Assy	1	SEG33106938-301	1011	-		
113			1/2 x 8" Wobble	1	SEG33108423-301	1004	-		
114			7/16 x 6" Wobble	1	SEG33106931-301	1014	-		

IV Bag:

- □ 2 - Towels - Item #100
- □ Contamination Detection Kit - Item #99
- □ RET (sm-sm, black) - Item #101
  - □ 2 - DCM Plug - Items # 102 & #103
- □ RET (sm-sm, black) - Item #104
  - □ 2 - GP Caddy - Items # 105 & #108
    - □ 2 - Adjustable Thermal Mittens - Items #106, 107, 109 & 110
- □ RET (sm-sm, black) - Item #111
  - □ Socket Caddy - Item #112
    - □ 1/2-in Socket-8 ext - Item #113
    - □ 7/16 (wobble) Socket-6 ext (spare) - Item #114

REPORT any additional items found to MCC-H.

Table J: Stow EFGF

Item #	R	Location	Item	QTY	P/N	S/N	B/C	Final Location	Notes
115		A/L Crewlock Deployed	EFGF	**1**	260213-204662-557			A/L Crewlock Deployed In Mesh Bag	

Table K: Tether Stowage

Item #	R	Location	Item	QTY	P/N	S/N	B/C	Final Location	Notes
116a		Tether Staging Area	85 ' Safety Tethers	**2**	SED33116109-307	**#28 #30**		Tools Transfer Bag (For ULF6 Transfer to STS)	May already be in Tools Transfer Bag
116b			Waist Tether	**1**	SEG33106943-305	**1083**			**RED showing**; May already be in Tools Transfer Bag

Long Wire Tie Reference

Figure 1 - "W" fold of long wire tie.

Figure 2. - Compressed "W".

Figure 3. - "W" folded long wire ties in wire tie caddy.
(one wire tie per pocket)

28-0084 (MSG 159) POST EVA TRANSFER TO SHUTTLE (15 MIN)

NOTE

This procedure assumes 28-0069 (MSG 142) STS-134 POST EVA EMU RECONFIGURATION was completed on FD13 and 28-0083 (MSG 158) STS-134/ULF6 FD14 EVA TOOL STOW items 75-82b, 87, and 116 were completed on FD14

1. Retrieve Waist Tether (s/n 1086) from MDDK, Bag 'F'

2. Stow Waist Tether (s/n 1086) in the ISS Joint A/L Tether Staging Area

3. Configure/verify contents of TOOLS TRANSFER Bag per following table

TOOLS TRANSFER Bag

☐☐ 85-ft Safety tethers (#28 and #30) (2)
☐ 90 deg Connector Tool
☐ "Sample Wipes" Ziplock Bag
(Wipes 7, 9, & 11)
☐ "Non-Sample Wipes" Ziplock Bag
(Wipes 1, 4, & 6)
☐☐ 2 Handrails (0270/0271)
☐ EWIS Cable
☐☐☐☐ 4 EWC Connector Caps, size 21
(NZGL-PPC-N-21-R)
☐☐ 2 EWC Antenna Connector Caps, size 21
(NZGL-RPC-N-21-0-LP)
☐ EWC Connector Plug, size 25
(NZGL-RPC-25-0-LP)
☐ EWC Connector Cap, size 25
(NZGL-PPC-N-25-R)
☐ Fiber Optic Video Cap
(NZGL-PPC-N-15-R)
☐ Tape and Velcro Caddy (s/n 1005)
☐ PGT Battery (s/n 1004)
☐ Waist Tether showing RED (s/n 1083)

4. Transfer items in table below to Shuttle; report status to **MCC-H** when complete

Item	Destination
EMU 3004 (FT↓)	Temp stow Middeck
EMU 3018 (FN↓)	Temp stow Middeck
FT ECOK	Temp stow Middeck
FN ECOK	Temp stow Middeck
CF ECOK	Temp stow Middeck
SYSTEMS TRANSFER Bag	Temp stow Middeck
TOOLS TRANSFER Bag	Temp stow Middeck

Changes to the D2Xs camera setup to allow for shooting the ATV Area of Interest (AOI)

Target Information: The starboard end (+Y,-X) of ATV thermal blanket (see picture below)

Summary: Change Shutter Speed from 1/500 to 1/1000 sec to help with increase in focal length (400 to 800mm) and ISO from 100 to 200 to keep the exposure the same. Maintain this exposure regardless of lens selection (1/1000, f8, ISO 200).

Lens Plan: Start with the 400mm lens and add the 2X teleconverter when ATV AOI is in sight (-X ATV). Remove the 2X teleconverter after ATV target area no longer in sight. It should take no more than 10 minutes to reconfigure the camera and acquire the ATV photos.

Procedure Modifications: Reference P/TV Checklist, P/TV03 UNDOCK, page FS 1-26

3. Perform D2Xs MANUAL for undocking/external imagery, ATV AOI

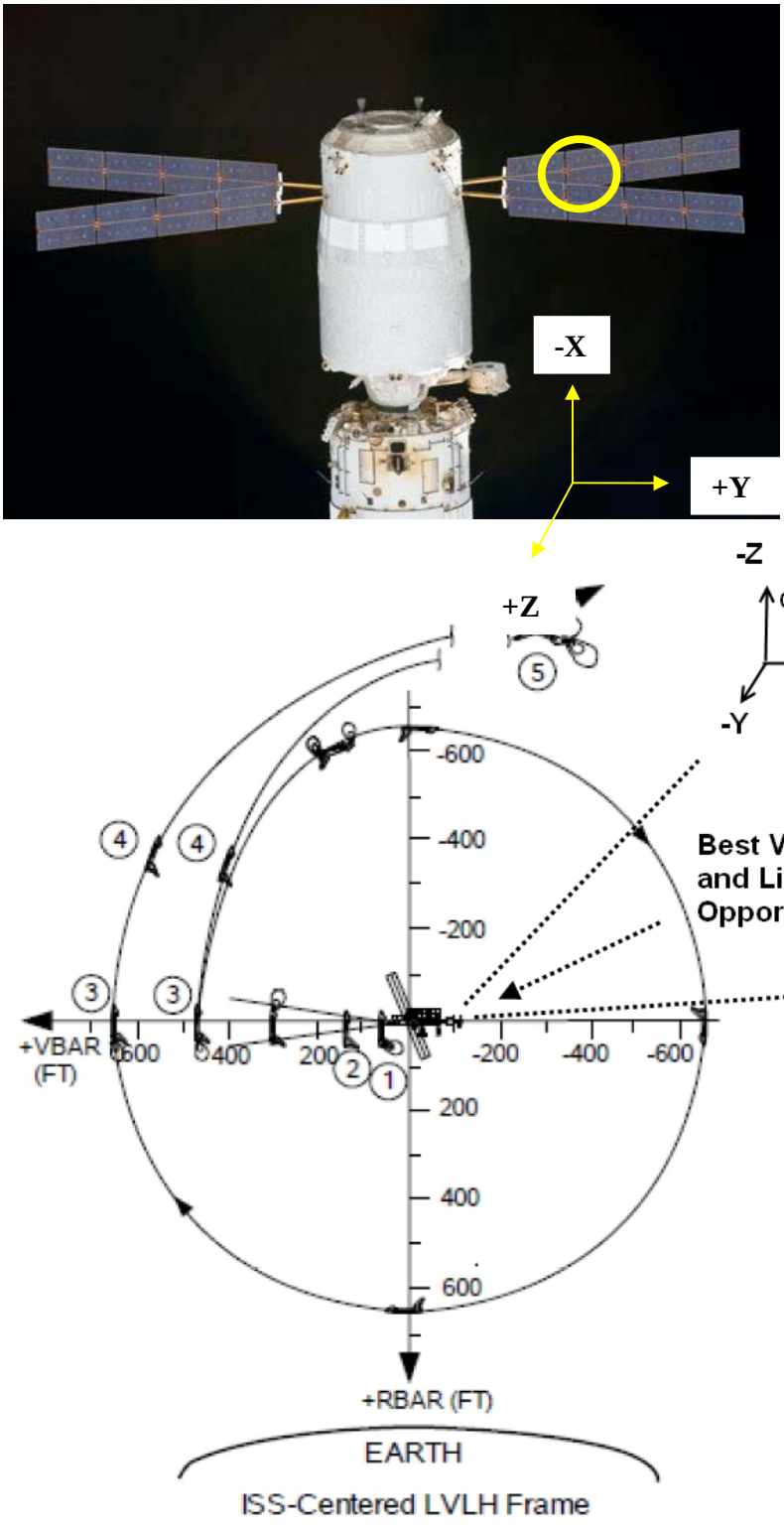
Remove ovhd window shields

SB-800 Flash Settings:
ON/OFF pb – OFF

Lens – 400mm (800mm via 400 w/2X converter)
Focus Limit – ∞ -6m
Lens Focus Mode – A
Aperture – Min, Locked
Body Focus Mode – S
√Batt installed
√Flash Card installed
Pwr – ON
Top LCD:
√Batt
√Frames remaining sufficient
Exp Comp (±) -0.0
Exp Mode – M:
SS – 1000
f/stop – 8
Meter – Matrix (◙)
Diopter – Adjust
Frame Rate – S
√BKT disabled – 0 F
Rear LCD:
ISO – 200
√QUAL – RAW
√WV – 0,A
AF Area Mode – [[ ]]
√Focus Area – Center
√Focus Selector Lock - L

MSG 160 - ATV Imagery Procedure

1



2

END OF PAGE 2 OF 2, MSG 160

28-0089 (MSG 161) 2.022 ULF-6 DOUBLE COLDBAG PACK

OBJECTIVE:

Transfer frozen and cooled samples and required Ice Bricks from MELFI to three Double Coldbags in preparation for ULF-6 Shuttle descent.

PARTS:

Double Coldbag S/N 1013
Double Coldbag S/N 1009
Double Coldbag S/N 1014
0.5 CTB (two, empty)
LtWt Cryo Gloves (a.k.a. Mechanix Wear)

TOOLS:

Coldplate/Wireway Cover

1. Remove all items from Double Coldbags S/N 1013, 1009, and 1014 and place into two 0.5 CTB.

   Notify **POIC** of what items were removed and which 0.5 CTB they are stowed inside.

2. ✓LtWt Cryo Gloves donned

CAUTION
1. Samples must be packed in the correct orientation shown for all items to fit properly for return.
2. Minimize exposure of MELFI trays, frozen and cooled Ice Bricks, and samples to ambient air to prevent increased sample temperatures.
3. Double Coldbag lid should remain closed when the internal volume is not being accessed.

NOTE

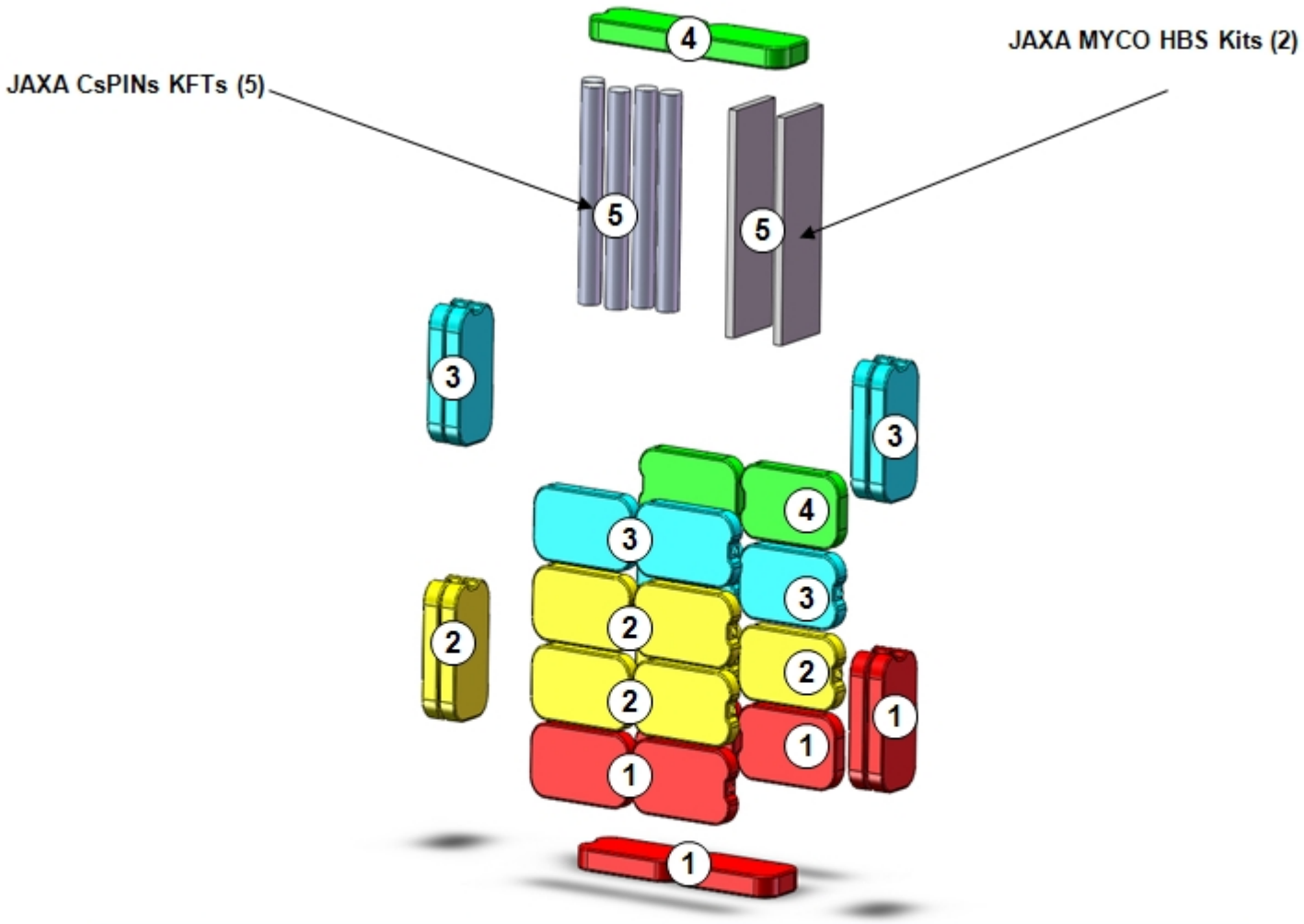
1. The Double Coldbag top interior seam is a useful guideline for lid to close properly.
2. 60 seconds & 45 minute Dewar opening rules do not apply during packing of the Coldbag.

MELFI-3 (MELFI-1)

3. DOUBLE COLDBAG S/N 1013 PACKING FOR RETURN

   Perform Double Coldbag packing per steps 1 to 5 in Figure 1. See Figure 2 for internal packing view.

****
* If MELFI tray is stuck,
* | Insert Coldplate/Wireway Cover completely between Tray and Dewar wall.
*
* | Firmly holding both Coldplate/Wireway Cover and Tray Handle, remove Tray
* | from Dewar.
****



Step	From MELFI Location*		Description
1	MELFI-3	4-A-1,2	Insert four +4C Ice Bricks **(one remains folded)**
2	MELFI-3	4-B-1,2	Insert four +4C Ice Bricks **(one remains folded)**
3	MELFI-3	4-C-1,2	Insert four +4C Ice Bricks **(two remain folded)**
4	MELFI-3	4-D-1,2	Insert two +4C Ice Bricks (Two ice bricks will remain in this location)
5	MELFI-1	4-B-3,4	Insert JAXA MYCO HBS Kits (two), JAXA CsPINs KFTs (five), and CsPINs Return Bag **(Leave CsPINs KFT S/N 902 in this location)**

* Dewar-Tray-Tray Section (3-A-1 = Dewar 3, Tray A, Tray Section 1)

Figure 1. - ULF-6 Double Coldbag S/N 1013 Packing Configuration.

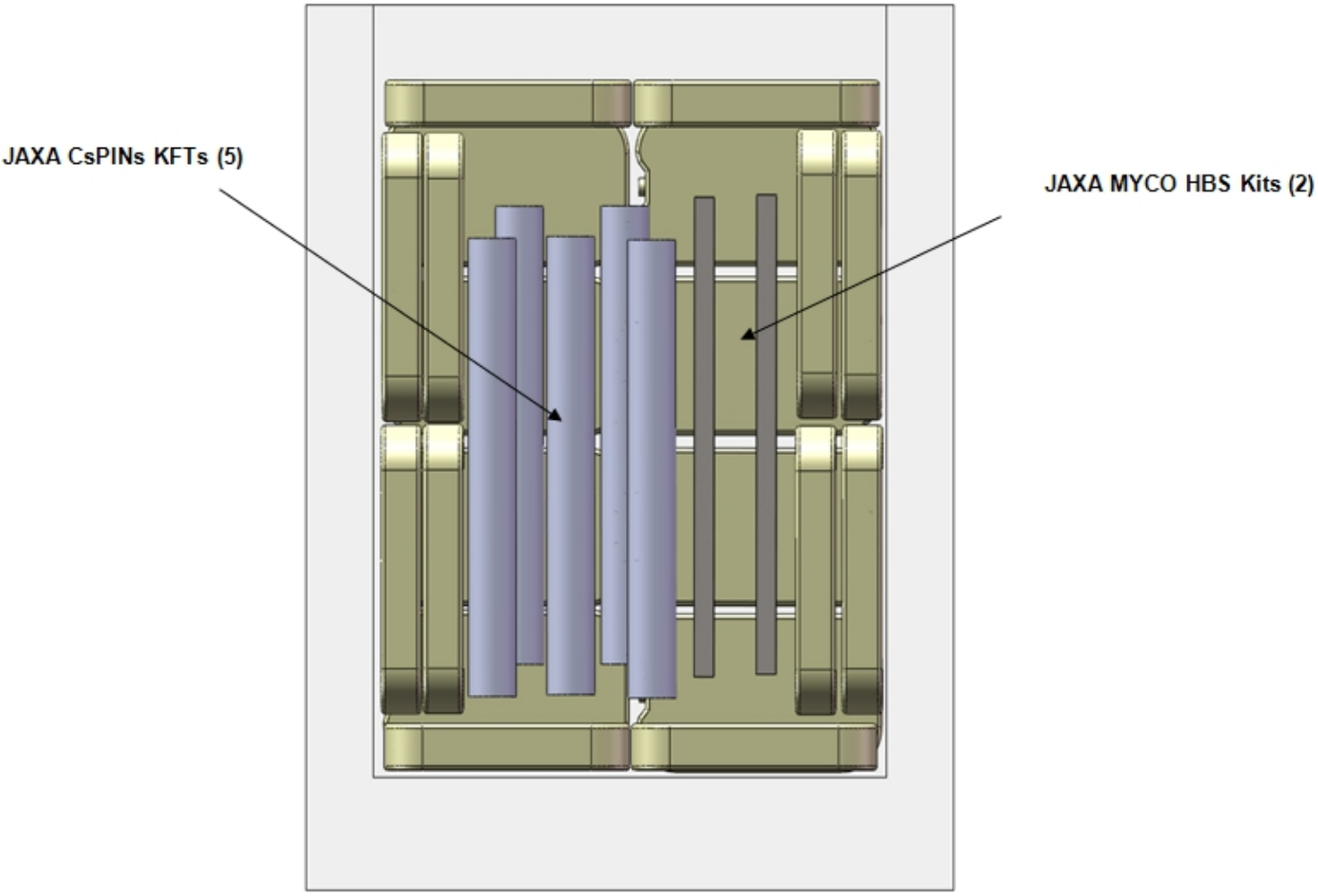
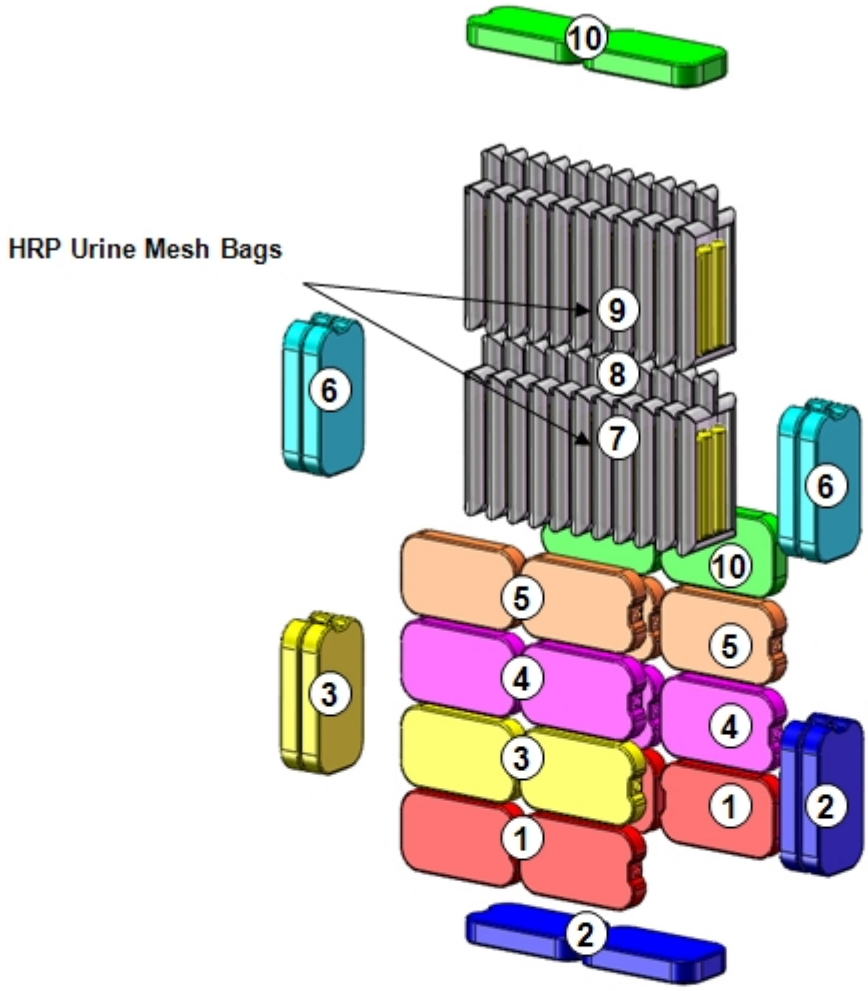


Figure 2. - Cut Out Side View of Packed Double Coldbag S/N 1013
(Front Ice Brick Layer Not Shown).

4. Close Double Coldbag lid, ensuring the Velcro is sealed around the entire perimeter.

5. DOUBLE COLDBAG S/N 1009 PACKING FOR RETURN

   Perform Double Coldbag packing per steps 1 to 10 in Figure 3. See Figure 4 for internal packing view.



Step	From MELFI Location*		Description
1	MELFI-3	2-A-1	Insert two -32C Ice Bricks
2	MELFI-3	2-A-2	Insert two -32C Ice Bricks **(one remains folded)**
3	MELFI-3	2-B-1	Insert two -32C Ice Bricks **(one remains folded)**
4	MELFI-3	2-B-2	Insert two -32C Ice Bricks
5	MELFI-3	2-C-1	Insert two -32C Ice Bricks
6	MELFI-3	2-C-2	Insert two -32C Ice Bricks **(both remain folded)**
7	MELFI-3	2-B-3,4	Insert HRP Urine Mesh Bags (All)
8	MELFI-3	2-C-3,4	Insert HRP Urine Mesh Bags (All)
9	**MELFI-1**	**3-C-2,3**	Insert HRP Urine Mesh Bags (All)
10	**MELFI-1**	**2-D-1,2**	Insert two -32C Ice Bricks (Two ice bricks will remain in this location)

* Dewar-Tray-Tray Section (3-A-1 = Dewar 3, Tray A, Tray Section 1)

Figure 3. - ULF-6 Double Coldbag S/N 1009 Packing Configuration.

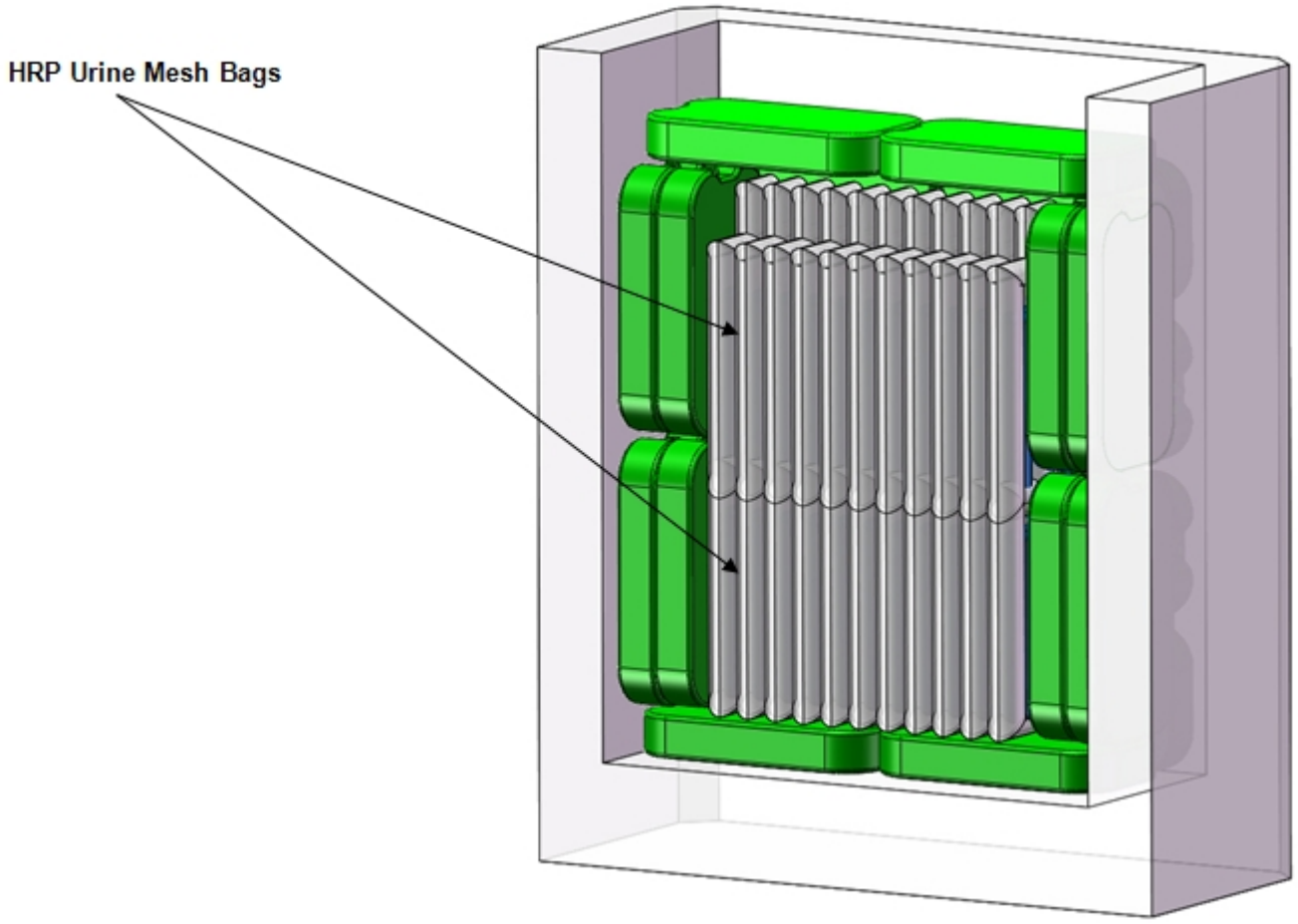
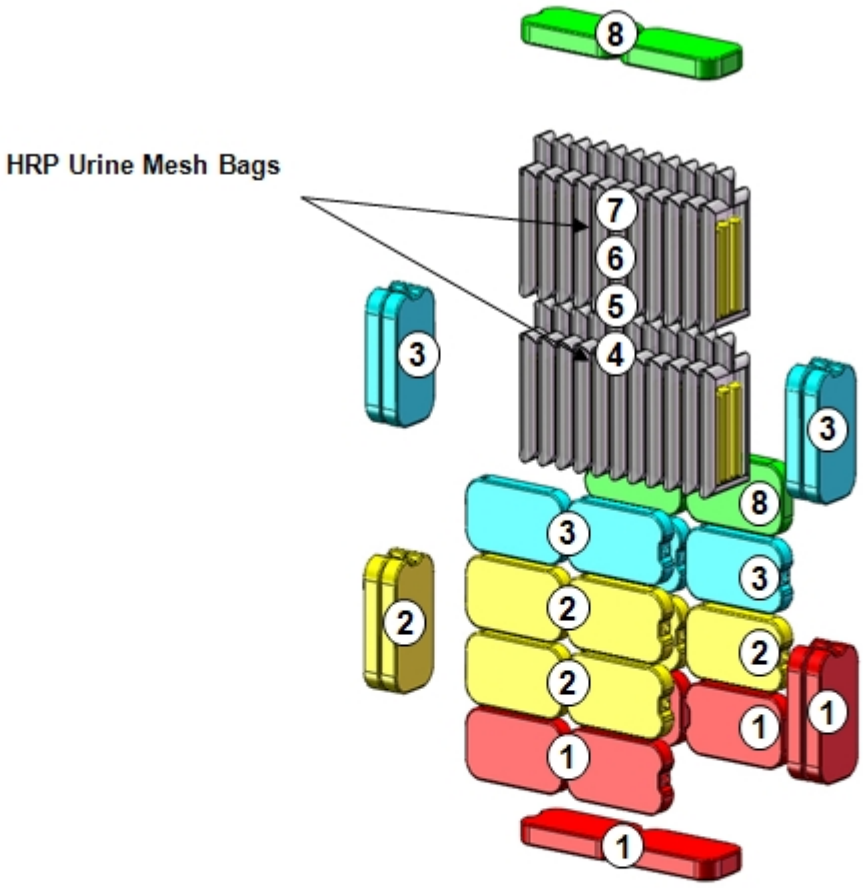


Figure 4. - Cut Out Side View of Packed Double Coldbag S/N 1009
(Front Ice Brick Layer Not Shown).

6. Close Double Coldbag lid, ensuring the Velcro is sealed around the entire perimeter.

MELFI-1 7. DOUBLE COLDBAG S/N 1014 PACKING FOR RETURN

Perform Double Coldbag packing per Steps 1 to 8 in Figure 5. See Figure 6 for internal packing view.



Step	*From MELFI Location**		*Description*
1	MELFI-1	3-A-3,4	Insert four -32C Ice Bricks **(one remains folded)**
2	MELFI-1	3-B-1,2	Insert four -32C Ice Bricks **(one remains folded)**
3	MELFI-1	3-D-1,2	Insert four -32C Ice Bricks **(two remain folded)**
4	MELFI-1	3-B-3	Insert HRP Urine Mesh Bags (All)
5	MELFI-1	3-B-4	Insert HRP Urine Mesh Bags (All)
6	MELFI-1	3-D-3	Insert HRP Urine Mesh Bags (All)
7	MELFI-1	2-A-3,4	Insert HRP Urine Mesh Bags (All)
8	MELFI-1	2-D-1,2	Insert two -32C Ice Bricks

* Dewar-Tray-Tray Section (3-A-1 = Dewar 3, Tray A, Tray Section 1)

Figure 5. - ULF-6 Double Coldbag S/N 1014 Packing Configuration.

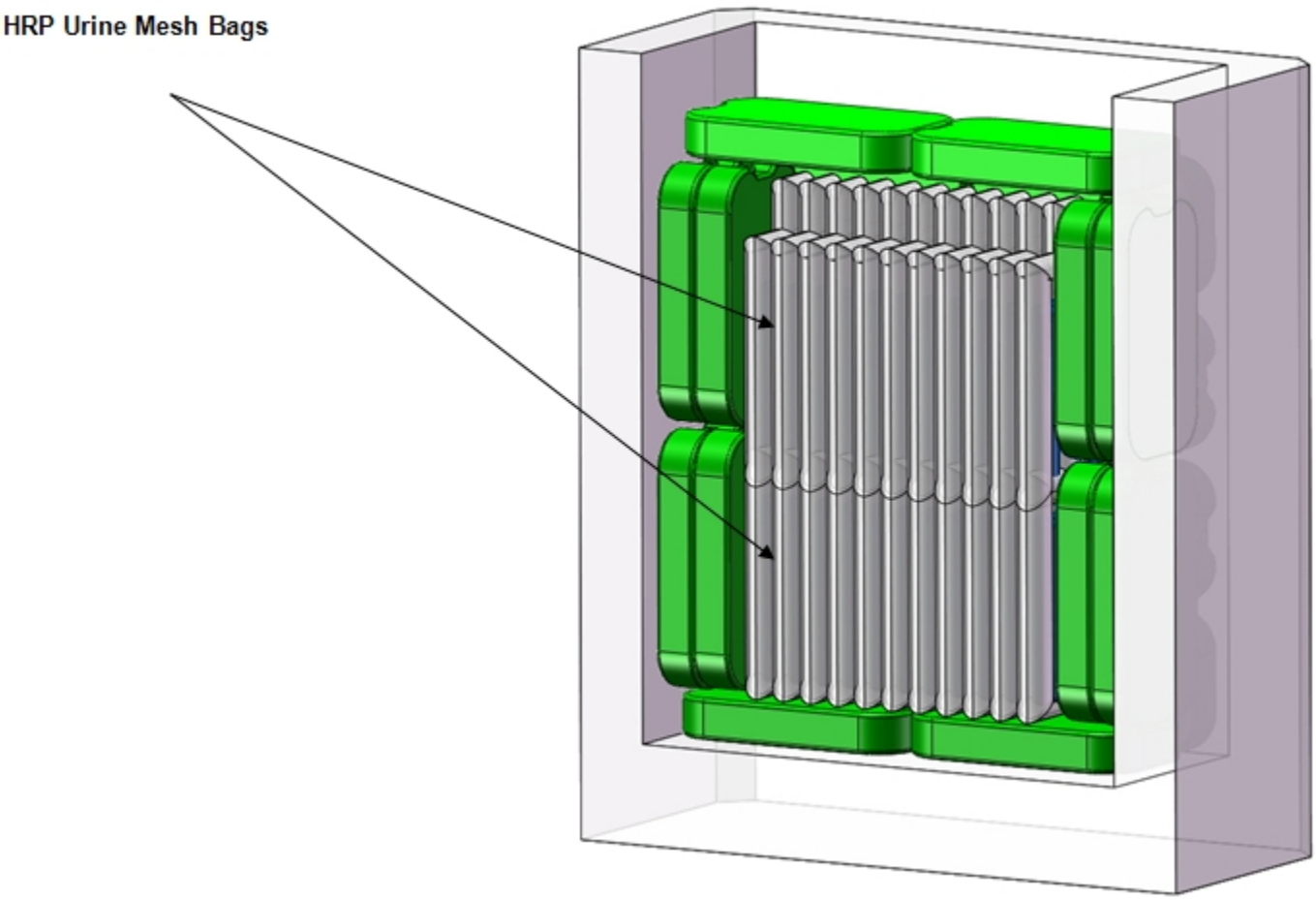


Figure 6. - Cut Out Side View of Packed Double Coldbag S/N 1014
(Front Ice Brick Layer Not Shown).

8. Close Double Coldbag lid, ensuring the Velcro is sealed around the entire perimeter.

9. ✓All MELFI-3 and MELFI-1 Dewar doors are closed and locked.

****
* If any Dewar Open Door LED – On:
* | Unlock Dewar door handle.
* | Dewar door handle →OPEN
* | Close, lock Dewar door handle.
* | Verify Dewar Open Door LED – Off
* | Notify **POIC** of results of malfunction.
****

10. Notify **POIC** that Double Coldbags S/N 1013, 1009, and 1014 sample packing is complete and provide the current GMT Time.

11. Reach into the card pouch on all Double Coldbags, remove the green Return Card from the back, and place it in the front.

12. Stow:
Double Coldbags (three) per ULF-6 Transfer List for descent.
0.5 CTB (two, containing items removed from Double Coldbags)
LtWt Cryo Gloves
Coldplate/Wireway Cover

GROUND updates IMS for following parts:

Double Coldbag S/N 1013 TO: Transfer List (step 12)
Ice Brick +4°C (fourteen) TO: Double Coldbag S/N 1013 (step 3)
JAXA Myco HBS Kit (two) TO: Double Coldbag S/N 1013 (step 3)
JAXA CsPINs KFTs (five) TO: Double Coldbag S/N 1013 (step 3)
CsPINs Return Bag TO: Double Coldbag S/N 1013 (step 3)
Double Coldbag S/N 1009 TO: Transfer List (step 12)
Ice Brick -32°C (fourteen) TO: Double Coldbag S/N 1009 (step 5)
HRP Urine (mesh bags, nineteen) TO: Double Coldbag S/N 1009 (step 5)
Double Coldbag S/N 1014 TO: Transfer List (step 12)
Ice Brick -32°C (fourteen) TO: Double Coldbag S/N 1014 (step 7)
HRP Urine (mesh bags, eighteen) TO: Double Coldbag S/N 1014 (step 7)

You will be packing three Double Coldbags with samples for return on Flight ULF-6. Below are some suggestions and constraints to keep in mind while performing this activity. This message should be reviewed in conjunction with the procedure.

1. It is recommended that the procedure be printed for use during the packing activity. We recommend you print this on ISS due to the red ink issue with the Orbiter printer. Reference Joint MSG 161 (28-0089) 2.022 ULF-6 Double Coldbag Pack.
2. Three Double Coldbags will be packed. You will be packing the Double Coldbags with Ice Bricks and samples removed from MELFI-3 and MELFI-1.
3. One CsPINs KFT (S/N 902) should be left in its current MELFI-1 location when packing Double Coldbag S/N 1013.
4. Only place samples into the interior volume created by the Ice Bricks.
5. Minimize MELFI door open time to help reduce moisture and protect other samples. Note that standard timing restrictions on MELFI do not apply for this activity.
6. Please don’t use excessive force to close the lid as the bag’s insulation panels may be damaged.
7. Please don’t tape the Double Coldbag lid shut as it may not fit into the Shuttle middeck locker.

ULF6 FD 14 Stowage Notes

CDRA-FRAME-INSTALL (FE-3,MS1) - 149/02:21

#	Location	Item Name	P/N	S/N	B/C	Notes
Type: Standard						
1	**Crew Preference**	Digital Camera				Deployed
2		Dry Wipes				PMA1 - USOS Hygiene Resupply
3		Velcro Strap				NOD1O4_B1 - Tape Pantry
4		Kapton Tape				NOD1O4_B1 - Tape Pantry
5		Gray Tape				PMM1P1_D - Tape Pantry
6		Sharpie				NOD1O4_C1 - Office Supply Pantry
7		Ziplock Bag				NOD2O1 - Ziplock Pantry
8	**JLP1P1_G** G, B/C BOE430J	Coldplate/Wireway Covers Kit (Cookie Sheets)	SJG33111361-301			If required.
9	**NOD1D4_B1** Misc Strap Ziplock	Adjustable Length Tether	G11F5140-1	024		
10	**NOD1D4_G2** Drawer 2	Ratchet, 1/4" Drive	SKG33117562-939			
11		4" Ext, 1/4" Drive	SKG33117562-764			
12		5/32" Hex Head, 1/4" Drive	SKG33117562-742			
13		(40-200 in-lbs) Trq Wrench, 1/4" Drive	SEG33112394-301	M206421		

14		9/16" SOCKET, 1/4" DRIVE	TMD18			
15	**NOD1D4_G2** Drawer 5	Static Wrist Tether	SKG33117562-335			
Type: Restow						
16	**JPM1D2_A2** TRAY ASSY, S/N 002, B/C J17TRAY2N	Adjustable Length Tether	G11F5140-1	016	ALT001N	
17		Fixed Length Tether Assy	G11F5140-2	019	FLTA0001N	

WHC-KTO-BUILD (MS4) - 149/07:46

#	Location	Item Name	P/N	S/N	B/C	Notes
Type: Standard						
1	**NOD3F2**	Solid Waste Container - Body	11Φ615.8720A55-20	Any		Qty: 1
2		Solid Waste Container - Lid	11Φ615.8720A55-10	Any		Qty: 1
3	**NOD1D4_G2**	Ratchet, 1/4" Drive	SKG33117562-939			
4		10 mm 6 Pt Socket, 1/4" Drive	SKG33117562-657			
5		(10-50 in-lbs) Trq Wrench, 1/4" Drive	SEG33112395-301			
Type: Restow						
6	**NOD3 Temp Stow**	Solid Waste Container - Body	11Φ615.8720A55-20	Report		Qty: 1
7		Solid Waste Container - Lid	11Φ615.8720A55-10	Report		Qty: 1

DCB-ULF6-PACK (MS1,MS4) - 149/08:26						
#	**Location**	**Item Name**	**P/N**	**S/N**	**B/C**	**Notes**
Type: Standard						
1	**COL1O4_D2** 0.5 CTB 1073, B/C 003955J or **JPM1A1**	LtWt Cryo Gloves (a.k.a. Mechanix Wear)	SEG32109404-30X			Size per crew preference
2	**COL1F2_A2**	Double Coldbag	SEG39136374-301	1009	00050403J	
3	**JPM1D4** Under Acoustic Pad	Coldplate/Wireway Cover (if needed)	03000			
4	**JPM1F6_E1**	Double Coldbag	SEG39136374-301	1013	00088536J	
5	**JPM1F6_F2**	Double Coldbag	SEG39136374-301	1014	00111808J	
6	**NOD3A2**	0.5 CTB [Qty: 2] "empty"	SEG33111836-303			Notify POIC of B/C or S/N of CTBs
Type: Restow						
7	**JPM1F6_E1**	0.5 CTB	SEG33111836-303			
8		Ice Brick +4°C (white) [Qty: 21]	SEG33121016-301			Notify POIC of discrepancies
9	**JPM1F6_F2**	0.5 CTB	SEG33111836-303			
10		Ice Brick -26°C [Qty: 14]	SEG33121016-307			Notify POIC of discrepancies
11		Ice Brick +4°C (white) [Qty: 7]	SEG33121016-			Notify POIC of

			301			discrepancies
12	**Ref. ULF6 Transfer List Return Item #713**	Double Coldbag	SEG39136374-301	1013	00088536J	
13		Ice Brick +4°C (white) [Qty: 14]	SEG33121016-301			Notify POIC of discrepancies
14		JAXA MYCO HBS Kits [Qty: 2]	MK-1	021 024	MYC01021N MYC01024N	Notify POIC of discrepancies
15		JAXA CsPINs KFTs [Qty: 5]	1023-M-1423-00	701 801 802 803 804	00141907K 00141908K 00141909K 00141910K 00141911K	Notify POIC of discrepancies
16		CsPINs Return Bag	LSE-ZIP002V-CP	002	CBES1792N	
17	**Ref. ULF6 Transfer List Return Item #715**	Double Coldbag	SEG39136374-301	1014	00111808J	
18		Ice Brick -32°C [Qty: 14]	SEG33121016-309			Notify POIC of discrepancies
19		3x5 Mesh Bag [Qty: 18]	SEG33121012-301			Notify POIC of discrepancies
20	**Ref. ULF6 Transfer List Return Item #714**	Double Coldbag	SEG39136374-301	1009	00050403J	
21		Ice Brick -32°C (green) [Qty: 14]	SEG33121016-309			Notify POIC of discrepancies
22		3x5 Mesh Bag [Qty: 19]	SEG33121012-301			Notify POIC of discrepancies

O2-XFER-TEARDOWN (CDR) - 149/10:11						
#	**Location**	**Item Name**	**P/N**	**S/N**	**B/C**	**Notes**
Type: Standard						
1	**LAB1P5_C1**	Clean Room Vinyl Tape	3M/1251			
2	**NOD1O4_C1** 0.5 CTB, S/N 1159, B/C 006608J	Clean Room Gloves	SEG33116979-301			
3	**NOD1P4_A2** 1.0 CTB: ISA and VAJ CTB, S/N 1256, B/C 010592J	Teflon (FEP) Bags	LB602:0404		00131043K	
4	**NOD1D4_G2 Drawer 2**	5/32" Hex Head, 1/4" Drive	SKG33117562-742			
5		Driver Handle, 1/4" Drive	SKG33117562-941			
6	**NOD1D4_G2 Drawer 3**	Inspection Mirror	SKG33117562-923			
Type: Restow						
7	**NOD1P4_D** D, B/C 009280J	G02 Transfer Flex Hose Assy	V857-643003-002	AA0873793	002668-1J	
8		ORCA O2 OUTLET LINE	683-51901-19	001001		

ISS-HATCH CLOSE (CDR,PLT,FE-3) - 149/11:11						
#	**Location**	**Item Name**	**P/N**	**S/N**	**B/C**	**Notes**
Type: Standard						
1	**NOD1O4_C1** 0.5 CTB: Rubber Gloves, S/N 1159, B/C 006608J	Nitrile Gloves	SEG33116807-301			Substitute for Rubber Gloves if none found.
2	**NOD2D0** Deployed near Fwd Hatch	Hatch Enclosure Assembly	683-60425			
3	**Temp Stowed in NOD2D0** Docking Mechanism Accessory Kit, P/N 33У.9962.003	APAS Hatch Tool (Ручка)	11Ф732.Г1021-ОА			APAS Hatch Tool
4		Cleaning Pads	33У.9938.002			
5		Braycote	601			
6		1 1/2 Inch Wrench	528-20942-1			Open End Wrench
7		Standoff Cover Bag Assy	SEM39125998-301			
8		Target Base Cover Assy	SEM39125997-301			
9	**PMA2** Ziplock Bag: SHUTTLE/ISS DUCT REMOVAL HATCH CLOSING	Ziplock: SHUTTLE/ISS DUCT REMOVAL HATCH CLOSING				
10		Bore O-Ring	2-248S0604			
11		Face O-Ring	2-255S0604			
12	**NOD1D4_G2 Drawer 1**	10" Long Adjustable Wrench	SKG33117562-913			
13	**NOD1D4_G2 Drawer 2**	Ratchet, 1/4" Drive	SKG33117562-939			

14		7/16" Deep Socket, 1/4" Drive	SKG33117562-681			
15		1/2" Deep Socket, 1/4" Drive	SKG33117562-682			
16		(40-200 in-lbs) Trq Wrench, 1/4" Drive	SEG33112394-301			
Type: Restow						
17	**NOD2D0** Docking Mechanism Accessory Kit, P/N 33У.9962.003	Target Base Cover Assy	SEM39125997-301			Docking Target Base Plate Cover
18		Standoff Cover Bag Assy	SEM39125998-301			Docking Target Standoff Cross Bag
19		Hatch Cover	33У.9936.021			APAS Hatch Cover
20	**NOD1O4_E2** 0.5 CTB: Broken/Expired Items, S/N 1283, B/C 010464J	Ziplock: SHUTTLE/ISS DUCT REMOVAL HATCH CLOSING				
21		Bore O-Ring	2-248S0604			Removed O-Ring
22		Face O-Ring	2-255S0604			Removed O-Ring
23	**LAB1P5_C1**	IMV Cone Screen	SEG11101191-301			

Please double check the following 4 potential connections of concern: 2 electrical and 2 hydraflows.

For electrical connectors, check that no red band is visible. If visible, you can tighten down, or cycle if required.

For Hydraflows, check that no silver band is visible. If visible, please try to tighten down by hand. If you have it tight and still see silver, please call MCC-H.

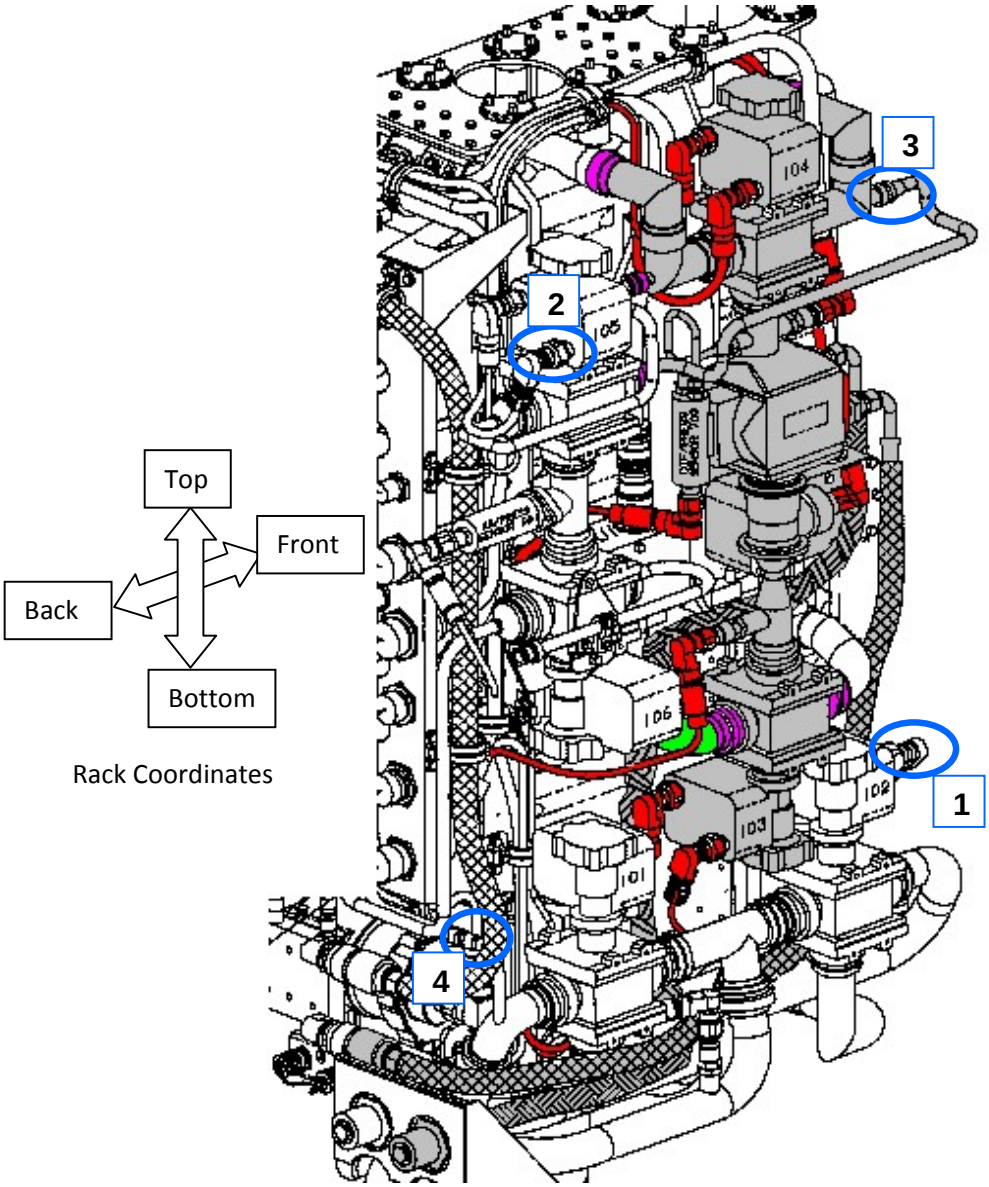
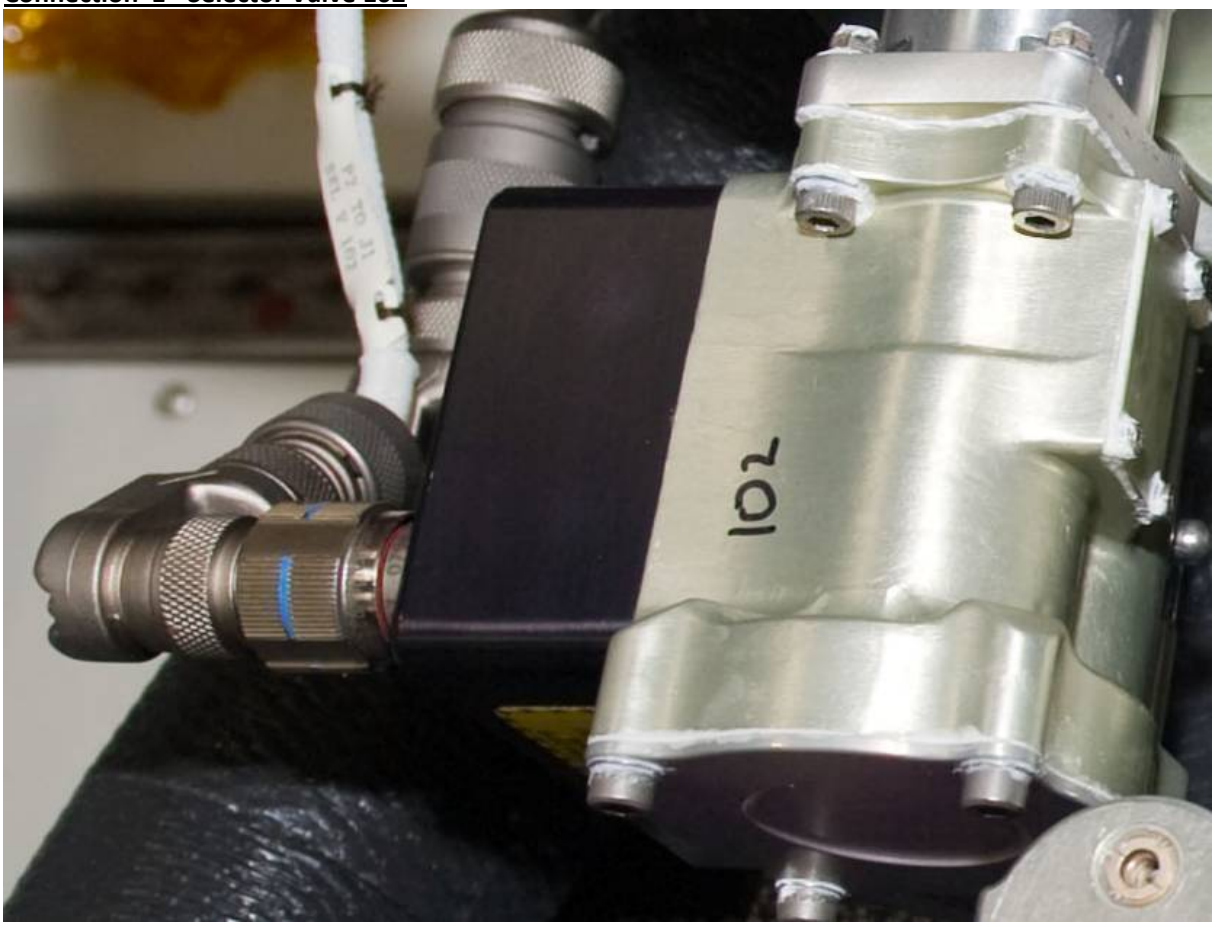
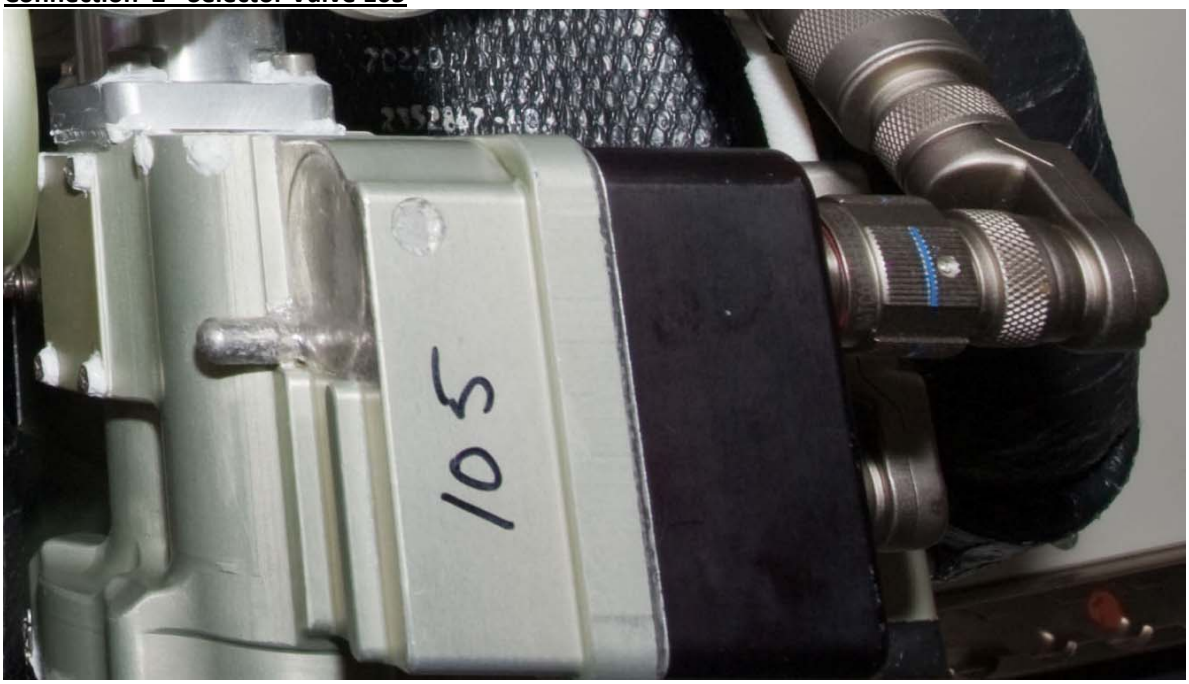


Figure 1.- Overview

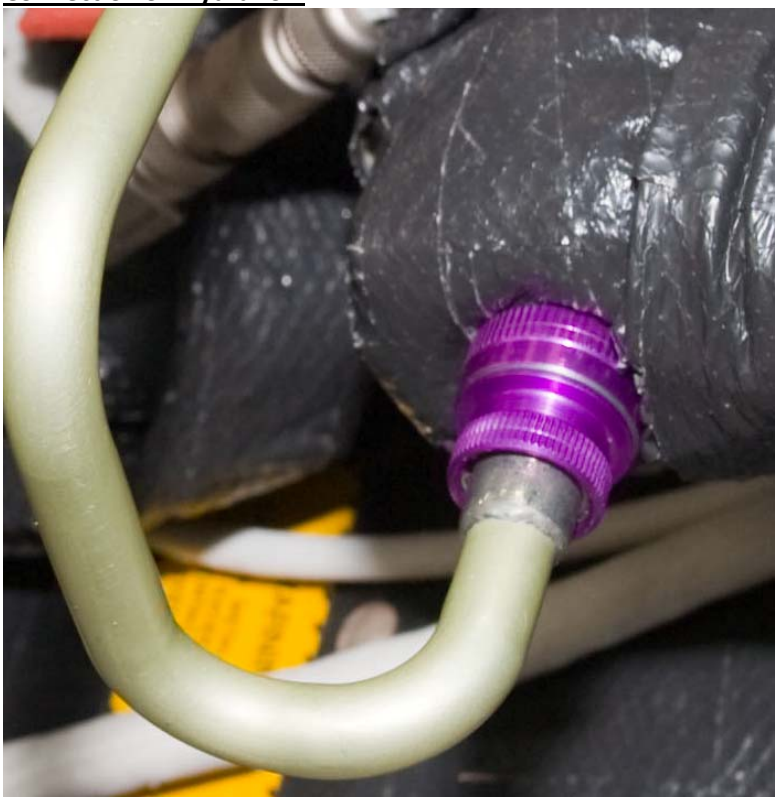
Connection 1 - Selector Valve 102



Connection 2 - Selector Valve 105



Connection 3 - Hydraflow



Connection 4 - Hydraflow